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Frontispeice

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A NEW TREATISE ON THE DISEASES OF HORSES:

Wherein what is neceſſary to the
KNOWLEDGE of a HORSE,
The Cure of his DISEASES, and other Matters relating to that Subject, are fully diſcuſſed, in a plain and eaſy Manner, from many Years Practice and Experience. With the cheapeſt and moſt efficacious Remedies.

BY
WILLIAM GIBSON, Surgeon,
In Duke-Street, Groſvenor-Square.

Illuſtrated with Thirty-two COPPER-PLATES.

In TWO VOLUMES.

VOL. I.

The SECOND EDITION, corrected.

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THE
PREFACE.

I SHALL make no apology, by way of Preface, for the enſuing Treatiſe; and ſhall only ſhew the method I have followed in the proſecution theereof.

I have divided the Book into Three Parts.

The Firſt contains a ſhort Deſcription of the Properties peculiar to the different kinds of Horſes, viz. their Age, Shape, Beauty, and Goodneſs; alſo their Faults and Imperfections, as well thoſe that are natural, as thoſe that are acquired by habit, or are cauſed by imperfect cures, or other ill management. Wherein the reader is inſtructed in the knowledge of the Eyes and Feet, and in the ſymmetry and proportion of the various parts of a Horſe, in ſo plain and intelligible a manner, that any one may from hence, in a ſhort time, attain to a competent ſkill in Horſes.

The Second contains a ſhort Epitome or Abridgment of Anatomy, wherein all the Parts of a Horſe are deſcribed in an eaſy and inſtructive manner, for the benefit of thoſe who have not ſeen diſſections, or attended lectures of Anatomy.

In this anatomical Part I have ſtudied all poſſible brevity, and at the ſame time have omitted nothing that may give the reader a clear notion of the Animal Oeconomy, with the diſeaſes and accidents to which it is expoſed; which I have illuſtrated in ſeveral Places from Obſervations on

Horſes I have ſeen opened, as a proper foundation for underſtanding their diſeaſes.

The Third contains an Account of the ſeveral maladies and diſeaſes incident to Horſes, with their ſigns, cauſes, and method of cure.

This I have introduced with a Diſcourſe concerning the Diet of Horſes, and the different manner of Feeding, and other management, whether in the houſe or at graſs; and the accidents to which Horſes are expoſed by miſtakes of this kind. I have here alſo laid down ſeveral uſeful and neceſſary cautions concerning Exerciſe; directions for Bleeding; the caſes that require Purging; the proper time and manner; with many uſeful helps for rearing young Horſes that have been kept up and pampered for ſale, and thereby rendered unfit for preſent uſe. Alſo the beſt rules to preſerve Health, and to prevent thoſe accidents that either cauſe ſickneſs, or produce ſuch ill habits of body as often render Horſes unſerviceable.

In treating the Diſeaſes I have rarely conſulted any one author, having obſerved the writers on the ſubject of Farriery for the moſt part defective or trifling, either from their want of judgment or ſufficient experience; and therefore I have deſcribed the diſtempers of Horſes chiefly as they have occurred to me in many years practice, not only among Gentlemen's Horſes, where I have had great variety of extraordinary caſes, but among ſome hundreds of Troop-Horſes, which were conſtantly under my care: In all which I have advanced nothing but what will be found agreeable to the rules of practice, and what I have had confirmed by frequent experience; wherein I have ſtudied the utmoſt brevity, by avoiding all unneceſſary digreſſions and tedious diſquiſitions, which might only have the effect to puzzle thoſe who are not, in ſome meaſure, verſed in the knowledge of the ſeveral branches of phyſic: And therefore I have deſcribed each diſtemper, whether ſimple or complicated, by relating the true cauſes with the ſymptoms, as they ſhew themſelves by their various degrees and appearances; and have clearly diſtinguiſhed in all caſes where the ſame common ſymptoms are found in different diſeaſes, by other diagnoſtics and ſigns that are peculiar, and point out the diſeaſes immediately treated of; by which any Man of common underſtanding may be able to proceed in the cure of moſt Diſtempers, with much greater certainty than by any helps of this kind that have been yet offered to the Public.

Neither have I been leſs regardful of the prognoſtics, by diſtinguiſhing the good from the bad; and in thoſe that portend danger, I have endeavoured to account for them in an eaſy familiar Way, to ſhew from whence ſuch bad prognoſtics generally ariſe, and how far any of the principal parts are affected when theſe appear, ſo as they may be prevented; or that a ſudden turn may be given to remove the ill diſpoſition that produces them. And this I look upon to be of ſuch conſequence to the right underſtanding the Diſeaſes of Horſes and their cures, that, without ſome inſight into theſe things, it is impoſſible to practiſe with any certainty or ſafety.

I have alſo taken notice of the incurable caſes of Horſes, whether thoſe proceeding from natural defects, or from accidents ill cured; likewiſe thoſe where the cure may be both uncertain, and at the ſame time ſo tedious as to exceed the value of the Horſe. All which I have deſcribed in a manner, that ignorant pretenders to Farriery may be ſo far convinced, as not to undertake impoſſibilities; and that the owners of Horſes that are incurable, may not be impoſed on by ſuch perſons,

ſons, nor keep Horſes to be only an uſeleſs and tireſome expence.

Upon the whole, I have endeavoured as much as poſſible to render this work of publick uſe, by treating the ſubject in ſuch a manner, that thoſe who have already attained to any knowledge in the Diſeaſes of Horſes, will find I have advanced nothing but what will perfectly agree with their own experience; and to ſuch this Treatiſe will be a great help; and muſt alſo be the means to inſtruct thoſe who are unacquainted, or have had but little inſight into ſuch things, having not only ſtudied the greateſt plainneſs every where throughout the whole, but given ſeveral inſtances of very extraordinary cures, and made many uſeful diſcoveries, which I hope may tend greatly to the preſervation of our Horſes. And as this was my chief deſign in compiling a new Treatiſe on the Diſeaſes and Maladies of Horſes, ſo I have formed it on a different and more practical ſcheme than thoſe books I formerly publiſhed on that ſubject. I have alſo inſerted the eaſieſt and cheapeſt remedies of all kinds, ſuch as I have found the moſt ſucceſsful in my own practice, and may be readily procured in the country, and many of them even in places remote from great towns. I have likewiſe given ſeveral precautions againſt bad drugs, and medicines not faithfully and well prepared, which often times hinder the expected ſucceſs.

Our Horſes being of no ſmall importance to the nation in general, both in peace and war, as well of great uſe to particular perſons of all ranks, I judged I could not do a better and more uſeful ſervice than to publiſh my own experiencc, after ſo many years practice; wherein I have beſtowed more pains and labour, in rendering it ſuitable to every one's capacity and learning, than if I had given it a fuller ſcope, and extended it to a greater length, which, tho' it would have been more eaſy to myſelf, might have been leſs profitable to others. And therefore, in regard of the great pains and time I have ſpent in compiling ſo uſeful a Treatiſe, I may preſume to hope for ſome ſuitable encouragement from the Public.

I take this opportunity to acquaint the Publick, that I have educated my ſon William, with an intention to ſucceed me in my buſineſs, he having been conſtantly employed in it for theſe fifteen years paſt; and I hope, and am indeed perſuaded, he will give univerſal ſatisfaction.

Duke-ſtreet, Oct. 1. 1750.

PART I.

Containing the neceſſary Things for the Knowledge of a HORSE, *&c.*

CHAP. I.

The Proper Names of the External Parts of a HORSE.

AS my intention, in this ſhort treatiſe, is to render the knowledge of Horſes, with the accidents and diſeaſes to which they are liable, as plain and eaſy as poſſible: Therefore, that I may not deviate too far from the common method, I have begun with the names of the external parts of a Horſe; for tho' many of his parts have their names in common with all other animals, yet he has others that cuſtom has rendered peculiar to him only; and without ſome acquaintance with theſe terms and diſtinctions, we can neither know much of a Horſe nor of his diſeaſes.

Names of the External Parts about the Head.

The firſt thing that comes to be deſcribed in a Horſe is his Head, conſiſting of ſeveral Parts, as the Ears, the Noſe, the Mouth, the Forehead, the Eyes and Temples, *&c.* The two hollows above the Eyes, ſo remarkable, eſpecially

cially in old Horſes, are called the Eye-pits. The Forehead is often called his Brow; and that part of the Head which is the moſt backward, where it joins to the Neck, is called the Poll or Noll; and the juncture of the Head and Neck, the Onſet or Setting-on of the Head. The Upper and Under-Lips, including the Tip of the Noſe, form the Muzle; and the Hairs that are ſcattered on a Horſe's Under-Lip to the place where the curb of the bridle reſts, is called his Beard. The inſide of the Mouth, between the Lower Jaw-Bones, where the Tongue lies, is called the Channel. The fleſhy rows that run acroſs the upper-part of the Mouth, and are ſo diſtinguiſhable in young Horſes, are called the Bars, which reach almoſt quite to the Palate.

The Neck reaches from the Head to the Shoulders. The Hair which grows along the upper-part, is called the Mane, and the part that is the moſt arched the Creſt, which in a fine Horſe full of vigour riſes ſemicircular, but when a Horſe has been diſeaſed or ſtarved that his Neck ſinks, he is ſaid to be Creſt-fallen.

The Withers is the part that riſes upon the top of the Shoulders, and is compoſed of the higheſt Spines. It is from the top of the Withers that a Horſe is meaſured to know his ſize.

From the Withers to the hind-part of the Back are the Reins, which generally reach the length of the ſaddle to the higheſt Spine; and in ſome long-back'd Horſes a little beyond the length of a common ſaddle. Next the Reins are the Loins, which reach to the Croup; and where the Crupper lies is termed the Channel. The Croup reaches from the Reins to the Dock, and includes all that Declivity or Deſcent which goes to the Tail, and in men and ſome other animals is called the Rump.

The Body or Carcaſs.

The Body of a Horſe is uſually called his Carcaſs; ſo that a large-bodied Horſe is ſaid to have a large Carcaſs, and a ſlender one to have a ſmall Carcaſs; and when the Body is compact and well made, he is ſaid to be well carcas'd, or to have a good Carcaſs.

The Flanks are ſufficiently known, being the parts on both ſides below the Reins which reach from the Short-Ribs to the Haunches; and the Belly is that which reaches from the Briſket to the Sheath.

The Shoulders incloſe the whole Breaſt on both ſides, beginning from the Withers, and reaching downwards to the Fore-Legs or Arms.

The Limbs, *&c.*

The Arms begin from the Shoulders, and the hind-part which points towards the Briſket is called the Elbow; the Fore-Leg or Arm reaches to the Knee; on the inſide runs the Plat Vein, which is often opened for Lameneſs of the Shoulders or diſorders of the Lungs. The part which reaches from the Knee to the Paſtern is called the Shank; behind the Shank is inſerted into the Heel that ſtrong tendon called the Back-Sinew, which is ſo often ſubject to be ſtrained or hurt.

The Paſtern reaches from the lower part of the Shank to the Foot; where it joins the Shank is called the Paſtern-Joint or Fetlock-Joint, as ſome term it, from the tuft of hair that grows on the lower part of the Leg behind, above the Heel, which is called the Fetlock. The Paſtern has a juncture in the middle, to facilitate the motion of the foot; ſo that the upper part next the Shank is called the Great Paſtern, and that which joins the bone of the Foot, the Leſſer Paſtern, and where it joins the Foot is called the Coffin-Joint.

The Hoof is often called the Coffin, and the bone of the Foot the Coffin-Bone, becauſe the Hoof incloſes that bone, as in a coffin. The hair that circles round the upper part of the Hoof is called the Crown or Coronet.

The Foot conſiſts of the Quarters, Sides, and Toe: The Quarters incloſe the Heel, compoſing the inner and outer quarter, and end with the extremity of the Heel. The Sides and Toe need no deſcription. The under part of the Foot is made up of the Fruſh or Frog, and the Sole. The Frog riſes from the middle of the Sole, and terminates at the Heel: It is more ſoft and elevated than the Sole, and is that part which the Farriers ſhape like the point of a ſpear, when they pare a Horſe's Foot, in order to his being ſhod. The Sole is that plate of horn which covers the bottom of the whole Foot, and adheres to the verge of the Hoof, where the nails are driven in ſhoeing.

In the hind parts of a Horſe are his Haunches, which begin at the two bones on each ſide which incloſe the Loins, and deſcend to the Ham or Hock.

The Stifle is that part which jets out from the edge of the Thigh towards a Horſe's Belly, when he is in any action that bends his Leg: It is the Knee-Pan of a Horſe, ſituated, on the middle joint of the Thigh, between the Thigh-Bone and the Leg. The Whirl-Bone is the upper end of the Thigh-Bone towards the Hip; and when that happens to be much ſprain'd, a Horſe is ſaid to be Hip'd.

The Thigh or Gaſcoin begins at the Stifle, and reaches to the Ply or Bending of the Ham or Hock. When a Horſe is round and plump in the Thighs, he is ſaid to be well gaſcoin'd.

The Ham or Hough is the Ply or Bending of the Hind-Leg. The round knob behind is called the Heel of the Hock, or Cappelette, according to ſome writers, and where the great Maſter-Sinew is inſerted.

As the Small of the Fore-Leg is called the Shank, ſo the Small of the Hind-Leg is called the Inſtep. The Paſterns and Feet having the ſame names and uſes behind as before, need no further deſcription.

Theſe being the uſual names and appellations by which horſemen diſtinguiſh the ſeveral parts of a Horſe, it remains only to take notice, that the Right-Side of a Horſe, is always called his Off-Side, and his Left the Near-Side, being that to which we always approach when we go to mount or handle a Horſe. Upon this we alſo diſtinguiſh a Horſe's ſeveral parts; for inſtance, we ſay the Off-Leg and the Near-Leg, the Off-Foot and Near Foot, the Off-Eye and Near-Eye; and ſo of others.

CHAP. II.

The ſureſt Marks whereby to know the Age of a HORSE.

The diviſion of the Teeth.

THE age of a Horſe is eaſily known by his Mouth till he comes Eight, after which the uſual marks wear out. A Horſe, like many other brute-animals, has its Teeth divided into three ranks *viz.* his Fore-Teeth, which are flat and ſmooth, his Tuſhes, and his Back-Teeth. His Back-Teeth or Jaw-Teeth are called his Grinders, being thoſe by which a Horſe chews and grinds his provender, and are in number twenty-four, twelve above and twelve below: They are ſtrong double Teeth, with ſharp edges; but when a Horſe grows old they wear much ſmoother.

The Foal-Teeth.

The firſt that grow are his Foal-Teeth, which begin to come forth a few Months after he is foaled: They are twelve in number, *viz.* ſix above and ſix below; and are eaſily diſtinguiſhed from the Teeth that come afterwards, by their ſmallneſs and whiteneſs, not unlike the Fore-Teeth of a man.

The Nippers or Gatherers, at what age they appear.

When a Colt is about two years and a half old, he caſts the four middle-moſt of his Foal-Teeth, *viz.* two above and two below; but ſome do not caſt out any of their Foal-Teeth till they are near three years old. The new Teeth are eaſily diſtinguiſhed from the Foal-Teeth, being much ſtronger, and almoſt twice their ſize, and are called the Nippers or Gatherers,

therers, being thoſe by which a Horſe nips off the graſs, when he is feeding abroad in the fields, or in the houſe gathers his hay from the rack. When a Horſe has got theſe four Teeth complete, he is reckoned three years old.

When he is about three and a half, or in the ſpring before he is four years old, he caſts four more of his Foal-Teeth, *viz.* two above and two below, one on each ſide the Nippers or Middle-Teeth: So when you look into a Horſe's Mouth, and ſee the four Middle-Teeth full grown, and none of the Foal-Teeth remaining but the Corner-Teeth, you may conclude he is four that year about *April* or *May*: But ſome are later Colts, which, however, makes little alteration in the Mouth.

The Tuſhes.

The Tuſhes appear near the ſame time with the four laſt mentioned Teeth, ſometimes ſooner than theſe, and ſometimes not till after a Horſe is full four years old: They are curved, like the Tuſhes of other beaſts, only in a young Horſe they have a ſharp edge all round the top and on both ſides, the inſide being ſomewhat grooved and flattiſh, inclined to a hollowneſs.

When a Horſe's Tuſhes do not appear for ſome time after the Foal-Teeth above mentioned are caſt out, and the new ones come in their room, it is generally owing to this, that their Foal-Teeth have been pulled out before their time, by the breeders or other dealers in horſes, to make a colt of three years old appear like one of four, that he may be the more ſaleable; for when any of the Foal-Teeth are pulled out, the others ſoon come in their place; but the Tuſhes having none that go before them, can never make their appearance till their proper time, *viz.* when a Horſe is about four, or coming four: And therefore one of the ſureſt marks to know a four year old Horſe, is by his Tuſhes, which are then but very ſmall and ſharp on the top and edges.

The Corner-Teeth. When a Horſe comes five, or rather in the ſpring before he is five, the Corner-Teeth begin to appear, and at firſt but juſt equal with the Gums, being filled with fleſh in the middle. The Tuſhes are alſo by this time grown to a more diſtinct ſize, tho' not very large: They continue likewiſe rough and ſharp on the top and edges. But the Corner-Teeth are now moſt to be remarked: They differ from the Middle-Teeth in their being more fleſhy on the inſide, and the gums generally look rawiſh upon their firſt ſhooting out, whereas the others do not look diſcoloured. The Middle-Teeth arrive at their full growth in leſs than three weeks, but the Corner Teeth grow leiſurely, and are ſeldom much above the Gums till a Horſe is full five: They differ alſo from the other Fore-Teeth in this, that they ſomewhat reſemble a ſhell; and from thence are called the Shell-Teeth, becauſe they inviron the fleſh in the middle half-way round, and as they grow the fleſh within diſappears, and leaves a diſtinct hollowneſs and openneſs on the inſide. When a Horſe is full five theſe Teeth are generally about the thickneſs of a crown-piece above the Gums. From five to five and a half they will grow about a quarter of an inch high, or more; and when a Horſe is full ſix, they will be near half an inch, and in ſome large Horſes a full half-inch above the Gums.

The Corner-Teeth on the Upper-Gums caſt out before thoſe on the Under; ſo that the Upper Corner-Teeth are ſeen before thoſe below; on the contrary, the Tuſhes in the Under-Gums come out before thoſe of the Upper.

The Mark in a Horſe's Mouth deſcribed.

When a Horſe is full ſix years old, the hollowneſs on the inſide begins viſibly to fill up, and that which was at firſt fleſhy grows into a browniſh ſpot, not unlike the eye of a dried garden-bean, and continues ſo till he is ſeven; only with this difference, that the Tooth is more filled up and even, and the Mark or Spot becomes faint, and of a lighter colour. At eight the Mark in moſt Horſes is quite worn out, tho' ſome retain the veſtiges of it a long time; and thoſe who have not had a good deal of experience may ſometimes be deceived by taking a Horſe of nine or ten years old for one of eight. It is at this time only, when a Horſe is paſt Mark, that one can eaſily err in knowing the age of a Horſe; for what practices are uſed to make a very young Horſe or Colt appear older than he is, by pulling out the Foal-Teeth before their time, may be diſcovered by feeling along the edges where the Tuſhes grow, for they may be felt in the Gums before the Corner-Teeth are put forth; whereas, if the Corner-Teeth come in ſome months before the Tuſhes riſe in the Goms, it is to be much ſuſpected the Foal-Teeth have been puled out at three years old,

I

False Marks.

I ſhall take little notice of the tricks that are uſed to make a falſe Mark in a Horſe's Mouth, by hollowing the Tooth with a Graver, and burning a mark with a ſmall hot iron, becauſe thoſe who are acquainted with the true Marks, will eaſily diſcover the cheat by the ſize and colour of the Teeth, by the roundneſs and bluntneſs of the Tuſhes, by the colour of the falſe Mark, which is generally blacker and more impreſs'd than the true Mark, and by many other viſible tokens which denote the advanced age of a Horſe.

The Age of Horſes not eaſily diſcovered after the Mark is out.

After a Horſe has paſſed his eighth year, and ſometimes at ſeven, nothing certain can be known by the mouth: Nevertheleſs ſome Horſes have but indifferent Mouths when they are young, and ſoon loſe their Mark; others have their Mouths good for a long time, their Teeth being white, even, and regular ſometimes till they are ſixteen years old, and upwards, with many other marks of freſhneſs and vigour; but when a Horſe comes to be very old, it may be diſcovered by ſeveral indications, the conſtant attendants of age, *viz.* hisGums wear away inſenſibly, and leave his Teeth long and naked at their roots: The Teeth alſo grow yellow, and ſometimes browniſh. The bars of the Mouth, which in a young Horſe are always fleſhy, and form ſo many diſtinct ridges, in an old Horſe are lean,dry, and ſmooth, with little or no riſing. The Eye-Pits in a young Horſe (except thoſe ſaid to be come of old Stallions)are generally filled up with fleſh, look plump and ſmooth; whereas they are ſunk and hollow in an old Horſe, and make him look ghaſtly, and with a melancholy aſpect. There are alſo other marks which diſcover a Horſe to be very old, *viz.* grey Horſes turn white, and many of them all over flea-bitten, except about their joints. This, however, happens ſometimes later, and ſometimes ſooner, according to their variety of colour and conſtitution: Black Horſes are apt to grow grey over their Eye-brows, and very often over a good part of their Face, eſpecially thoſe who have a ſtar or a blaze fringed round with grey, when they are young. I have known two or three inſtances of black Horſes turn'd white and flea-bitten with extreme old age: However, this but is rare; for moſt black Horſes retain their native colour, except about their Face, Muzle, and ſome of their joints. All Horſes, when very old, ſink more or leſs in their backs, and ſome Horſes that are naturally low-back'd, grow ſo hollow with age, that it is ſcarce poſſible to fit them with a ſaddle. Of this kind are ſeveral Spaniſh and Barbary Horſes, and many of the Daniſh and Flanders breed: Their Joints with old age grow alſo ſo ſtiff, and their Knees and Hocks bend, and are apt to trip and ſtumple upon every the leaſt deſcent, tho' the way be ſmooth and no ways rugged. After which they are of little uſe to the owner.

CHAP. III.

Such Faults and Defects as ought chiefly to be avoided in buying of HORSES.

No ſmall difficulty in buying of a horſe well.

I Believe moſt of thoſe who have any great dealings in Horſes will readily agree in this, that few things in common life are more difficult than the buying of a Horſe well: and I have known many who boaſted of their ſkill and dexterity that way, and made greater pretences than others in the knowledge of Horſes, very much deceived. This is a matter that does not depend upon a man's having more wiſdom or parts than his neighbours, but upon long experience, with a good taſte or fancy regulated with ſome judgment; otherwiſe a man is like to make but an indifferent choice.

There are ſo many circumſtantial niceties about Horſes, eſpecially in what relates to the ſhape, make, and goings of a Horſe; and ſo much is ſaid about the marks of goodneſs and badneſs in Horſes, that it would fill up a whole volume to recount half of what one may hear talked in a few days upon that ſubject; and therefore I ſhall only here have a regard principally to ſuch things as relate to a Horſe's being ſound or unſound, as that which more immediately concerns my preſent province, with ſuch natural defects and imperfections as render Horſes the moſt unfit for common uſe; and ſhall recommend thoſe who would be further inſtructed in ſuch matters to the writings of the Duke of Newcaſtle, and to the works of the French and Italian equerries, who have been very minute in all thoſe parts of Horſemanſhip.

Sufficient trial neceſſary.

When a man is about to chuſe a Horſe, if he be never ſo good a judge, yet he muſt be forced to take ſome things upon truſt, unleſs he be allowed a ſufficient trial; for ſeveral defects in a Horſe are of ſuch a nature, that they cannot be eaſily diſcovered till a perſon has had him a ſhort time in his own keeping. If a Horſe has a lameneſs in any part that is eaſily perceived; if a Horſe's Limbs are ſwelled; if he has ſpecks or defluxions on his eyes; if he ſtartles and flies off at the ſight of common objects; if his Feet are ſo plainly bad as to make him go cripling along; if he heaves at his Flanks, and coughs: Theſe, and many more of ſuch-like, are defects that cannot be hid even from thoſe who perhaps know but little of a Horſe. And as to the ſhape and goings of a Horſe, ſome criticize with more judgment, and are leſs guided by fancy than others; but the hidden faults of a Horſe are not ſo eaſily ſeen into: For inſtance, ſome Horſes, when turned ſix or ſeven years old, are ſubject to a dry chronical fixed cough, which comes upon them at uncertain times, perhaps twice or thrice a day, eſpecially when ſuch Horſes happen to catch a freſh cold: Sometimes a Horſe with this malady coughs ſeldom but after drinking; ſometimes one ſhall never hear him cough while he is in exerciſe, but as ſoon as he comes into a ſtable, or ſtands ſtill any time after riding, he falls into a vehement fit of coughing, which often laſts but a little while. Sometimes he ſhall not be heard cough more than any other ſound Horſe for ſeveral weeks; and when the owner is ready to think him recovered, he ſhall fall again into his old way of coughing all of a ſudden, and without any ſymptoms of a freſh cold. As this is a malady that cannot be eaſily cured, and often, tho' not always, endangers a Horſe's wind, ſo it is not ealſiy diſcovered by any apparent ſymptoms to the buyer, unleſs by chance he ſees him fall into one of his fits of coughing; for the method that moſt people take to try a Horſe's wind, by pinching the Windpipe, will make any Horſe cough dry and hollow: So that a man by ſuch trial may be eaſily deceived; and there will be but little alteration in the Flanks, unleſs a Horſe be old, or his wind pretty far gone.

The goodneſs or badneſs of the Eyes is another thing wherein the beſt judges are ſometimes miſtaken; for moſt people regard the clearneſs and tranſparency of the eye, which indeed ought to be conſidered: but it is worth obſerving, that Horſes, before they are ſix years old, have not that tranſparency in their Eyes which they arrive at afterwards, becauſe while they are young and growing their juices are viſcid and balſamic; ſo that their Eyes look thicker or clearer in proportion as their blood and juices happen to be more or leſs in a good ſtate. The ſame may be obſerved in all Horſes that have colds when the veſſels of the Eyes are full: The Eyes at that time look thick and ſometimes inflamed, and a blow on the Eye or a bite will have the ſame effect when there is not the leaſt danger of Blindneſs.

The knowledge of the Eyes.

It is not therefore always the clearneſs of the Eye that denotes its goodneſs, but a Man is alſo to form his judgment from other indications, particularly from the form and manner of the Eye, which includes not only the Body of the Eye but the Eye-Lids, Eye-Brows, and all the parts belonging to it. Many good ey'd Horſes have a heavineſs in their countenance with a Lowering-Brow, yet great numbers of this aſpect go blind with Cataracts when they are about ſeven years old, or between ſeven and eight, and ſometimes later. Theſe are the moſt ſuſpicious where there is a Bunch or fullneſs between the upper Eye-Lid and the Eye-Brow, with a fullneſs round the under Eye-Lid; ſo that the Eye appears as if it was inviron'd in a Ring. Such Horſes are often fleſhy about the Head and Jaws, which, upon every cold, or other ſlight accident, expoſes them to defluxions on their Eyes.

Their ſeveral defects.

When the Eye is extremely flat or ſunk within its orbit, it is always a bad ſign, even tho' there be no defluxion or humour upon it: A ſmall pig Eye is none of the beſt, nor a very large gogling Eye. The one often periſhes for want of nouriſhment, occaſion'd by ſome defect in the Nerves or the Arteries that ſupply it with Blood; the other by being too much expoſed to accidents, and by having too great ſupplies of nouriſhment.

That Eye is almoſt always weak which is of a longiſh oval Figure, eſpecially where the two corners are narrow like the ſhape of an almond. When the coat or membrane that riſes from the under part of the Eye happens to be large and thick ſo as to preſs the Eye-Ball, and the caruncle or kernel on the inward corner next the Noſe is ſpungy and moiſt, tho' there is ſometimes a remedy for this defect, yet ſuch Horſes in the end generally go blind.

When the eyes are bad, the Muſcles or movers of the Eyes are generally weak; ſo if the Eye looks dead and lifeleſs, the beſt way of trial is to hold up the Horſe's head in the ſame manner as when a drench is to be given, which will draw the Eye upwards; and if it remains there fixed and immoveable, or has a languid motion, it is a pretty ſure ſign the Eye is bad. And this trial will, for the moſt part, hold good whether the Eye be moiſt or dry.

Some regard the colour of the Eye, which however is different according to the difference of colour in Horſes; and indeed we are ſo far to regard the colour, that if the Iris or circle that ſurrounds the Pupil or ſight of the Eye be diſtinct, and of a pale variegated cinnamon colour, it always denotes a good Eye. For the Iris is always moſt diſtinct where the humours of the Eye are moſt clear and pellucid, and thoſe Horſes have the beſt Eyes which in colour reſemble the Eyes of a ſheep or goat; but few Horſes arrive to that perfection of colour and tranſparency till they are at leaſt ſix years old or upwards. On the other hand, if the Iris or circle round the Pupil be of a dark muddy colour, and does not appear diſtinct and variegated till one approaches near the Eye, and if the narrow ſky-coloured Verge (which we obſerve more or leſs in moſt Horſes on the outſide of the Iris) happens to be of a milky hue, it is no good ſign. Nevertheleſs wall-ey'd Horſes have for the moſt part good Eyes.

Some in examining the Eyes have a regard to the colour of the Horſe, which I take to be no ſure way of judging, for as there are good Horſes of all colours, ſo there are good Ey'd Horſes of all colours. The Grey, eſpecially the Pidgeon or Dove-coloured Grey, are the moſt ſuſpected, alſo the Iron-Grey, and the Dun, &c. But I think I may ſay from Experience, that whatever colour is the moſt common among Horſes, ſo as to exceed in number, abounds moſt with bad Eyes. And I have obſerved as many bad ey'd Horſes among the Black coach breed as any other.

The beſt Way of examining a Horſe's Eyes.

Moſt people in examining a Horſe's Eyes lead him under a Gateway or ſome ſhade, that they may ſee perfectly the colour and tranſparency of the Eye: but the beſt way is to obſerve his countenance when he comes firſt out of a dark ſtable into a ſtrong light; for if he has any weakneſs in his Eyes he will wrinkle his Brow, and look upwards to receive more light; and if the Pupil at the ſame time be large it is a bad ſign; and therefore the beſt way is to look to a Horſe's Eyes firſt in the ſhade, to obſerve the dimenſions of the Pupil, and if that leſſens upon his coming out into a ſtrong light, it is almoſt an infallible ſign that the Eye is good.

Some ſuſpect all Horſes that ſtartle to have bad Eyes; indeed many bad Ey'd Horſes are apt to ſtartle: But a Horſe that ſtares and looks upwards, lifting his Feet high when he moves, and as if afraid to touch the Ground, ſuch is more likely to have bad Eyes than one that ſtartles; for many Horſes ſtartle merely out of fear, and I imagine not a few from ſome defect in viſion, *viz.* from ſeeing objects indiſtinctly at ſome diſtance, in all which caſes the Eyes may be ſtrong and durable, tho' many fancy them to be weak. But if a Horſe frequently ſtartles when no object is before him that might cauſe him to ſtartle, we may then ſuſpect his Eyes to be but indifferent.

Upon the whole, that Eye is generally good where the Eyelids are thin, where the outward coat or Tunicle of the Eye is alſo thin and delicate, where the Caruncle next the Noſe is ſmall and dry, where the Eye is tranſparent and ſprightly, when a Horſe has a bold reſolute look, and takes notice of objects without fear. On the other hand, when a Horſe moves his Ears backward and forwards, and ſeems ſurpriſed at every noiſe or motion of the Hand; when he raiſes his Feet high, is uncertain in his walk or ſtep, and unequal in his goings, when his Eyes appear full and ſwoln with a fleſhy circle round them, or when they are ſunk or flat, or of a longiſh oval figure, when the outer coat is thick and covers a great part of the Eye-Ball, and the Glands or Kernels of the Eye are ſpongy and moiſt, all theſe denote the badneſs of the Eyes, and are often the forerunners of Blindneſs.

The next thing to be regarded in the chuſing of a Horſe is his Feet, that they be good and durable, for bad Feet in a Horſe is like a Houſe that has a weak foundation, for ſuch an one will do but little ſervice. I ſhall not here take much notice of the defects of bad ſhoeing, or other accidents, for theſe will be treated of in their proper place, but of thoſe chiefly which are natural to ſome Horſes, that expoſe them more than others to lameneſs, or at leaſt makes them unfit for the moſt common uſes, as hunting and travelling.

The knowledge of the Feet.

The knowledge of the Feet is reckon'd more eaſy than that of the Eyes, and I have ſeen many gueſs pretty well of the goodneſs of a Horſe's Feet, without any other examination than juſt to view them as he ſtands or walks. However, I would adviſe no Man to truſt to ſo ſuperficial a judgment, for tho' one may ſee the form and ſhape of the Foot to be fair and promiſing, yet there are other things to be conſidered, without which a good Horſeman may be deceived.

A thin or weak Foot, its defects.

A Horſe may have a well-made Foot, and well-proportion'd, and yet if it chance to be thin and weak, the buyer will be diſappointed of his expectations, for ſuch a foot is liable to be ſpoil'd in ſhoeing, by travelling on hard ſtony grounds, by too much drought in hot ſeaſons, or by too much moiſture in winter. A thin Foot is that where the Cruſt or horn is thin. This may be eaſily ſeen when the Shoe is taken off, becauſe the Verge all round the Soal will appear thin; and where it is ſo, a Horſe will winch with the leaſt touch of the pincers; but as this trial will ſeldom be allowed in buying of a Horſe, the beſt way to thoſe who would be acquainted with ſuch things, is to obſerve the bottom of the Cruſt, which is generally ragged, and where the Shoe-nails are clench'd and riveted: If theſe be high, it is a token the Foot is thin, and that there has not been ſufficient hold for the Nails, without driving them a good way upwards in the Cruſt. In a thin Foot the Heel and Frog are alſo apt to be ſoft and tender to the touch, and by reaſon of the weakneſs natural to ſuch kind of Foot, it ſometimes turns awry, and one point of the Heel will ſtand higher than the other, tho' this may be alſo owing to the crookedneſs of the Paſtern-joints, and will ſometimes happen where the Foot is tolerably ſtrong, but is moſt common to ſuch as have weak Feet; and where it is ſo, the Horſe wears his Shoes more on one ſide than the other, and often cauſes him to cut and go lame in a journey.

A very ſtrong or hard Foot.

As a thin weak Foot is juſtly reckoned a very great defect in a Horſe, ſo a very ſtrong Foot is not always the moſt eligible, but is liable to ſeveral accidents. A ſtrong Foot has the Fibres of the Hoof very diſtinct, and for the moſt part run in a ſtreight line from the Coronet to the Toe, like the grain of Oak, Lignum Vitæ, or any other hard wood that eaſily ſplits; and tho' ſome ſuch Feet will laſt very well, and keep free from accidents, where ſufficient care is taken to keep them moiſt and pliable, yet when they happen to be neglected upon a long journey, or much hard riding, eſpecially on dry ſtony grounds, or when they ſtand long in a hot dry ſtable, they will go lame and tender at the ſame time that no defect is to be ſeen on the Foot; for when the ſoft parts within are bruiſed by the hardneſs of the Hoof, or by the thickneſs and hardneſs of the Sole, which in all ſuch Feet is like a plate of Iron; and when this happens a Horſe will be in pain, and the true cauſe ſometimes not found out for a long time, which I have known in ſeveral inſtances; nor is it eaſy to reſtore ſuch Feet to a due temperament, as will be ſhewn hereafter.

When a Horſe that has a very ſtrong Foot takes up a Channel-Nail, or happens to be cut into the quick with a ſharp Bone, a ſharp Flint or piece of Glaſs, and a flow of humours follows upon ſuch a wound or puncture, the confinement theſe meet with from the ſtrength of the Foot create much anguiſh, and for want of vent below frequently cauſes an eruption round the Coronet, which proves for the moſt part troubleſome, and makes the cure tedious and uncertain, eſpecially when ſuch caſes happen to fall into bad hands.

I have known ſome inſtances where the Hoof and the Sole have been quite looſened from all their attachments to the Foot, the Filaments and Fibres that unite the horny part to the Fleſh being all torn and pull'd aſunder by the thickneſs and ſtrength of the Horn; and where this happens in any degree it is apt to leave a tenderneſs behind it, unleſs an uncommon care be taken to prevent it.

But the greateſt inconveniency in a very hard ſtrong Foot, is its being ſubject to Refts and Fiſſures, which cleave the Hoof quite thro', ſometimes from the Coronet down to the bottom; and this kind of Foot is the more eaſily expoſed to ſuch accidents, that the horny Fibres have a more viſible ſtrait direction than where the Feet is more ſoft and pliable; theſe clefts being for the moſt part in the Quarter, ſeldom admit of any other remedy than extirpating the whole piece that lies next the Heel, which defect is from thence called a falſe Quarter, wherein the cure is ſeldom ſo perfect, eſpecially in the fore Feet, as to leave no infirmity or blemiſh behind it. When the Fiſſure or Cleft does not penetrate thro' the Horn, but makes a line on the Surface, it is called a Sand Crack, being very common in ſome ſandy countries, where the Horſes Hoofs turn dry and crack with the heat of the ſand. Theſe are but little regarded where the lines are ſuperficial and not deep in the Horn, and are often cur'd by raſping the Foot, and keeping it cool and moiſt. However, it is a defect that muſt leſſen the value of a Horſe, in proportion to the degree of goodneſs or badneſs of his Foot; for when the Foot happens to be otherwiſe bad, theſe blemiſhes often degenerate and are of ill conſequence.

Narrow Heels.

The next defect I ſhall take notice of in the Feet, is of thoſe Horſes that have narrow

Heels. Some Horſes Feet are tolerably good even where the Heels are narrow, but when the Foot is hot and inclined to rottenneſs, and the Quarters loſe the round turn that they ought to have as they approach the Heel, and look as if they were bent and pinch'd together, inſomuch that the Heels of ſome ſuch Horſes are not above two fingers in breadth, then the Foot is bad; and the way that many take to mend theſe kind of Feet, by hollowing on each ſide the Frog, and thinning the Quarters to cauſe them ſtretch to a wider ſhoe makes them worſe; for the ſtretching out the Quarters contracts the Hoof on the Inſtep, and almoſt always turns ſuch Horſes hoof-bound and wire-heel'd.

Binding of the Hoof.

But Horſes often grow hoof-bound from other cauſes, and in ſome it proceeds from the ſhape of the Coffin-Bone, when it happens to be flat or hollow, where it ought to be riſing and round, when the Coffin drops by thinning the Sole too much, and not taking care to ſtay it up with ſtuffing and ſplinters, and from diſeaſes in the Feet that leave a weakneſs and deformity in them. But when a Horſe that has a very ſtrong flinty Foot happens to be hoof-bound, the caſe generally turns out bad. For the harder the Hoof the more it preſſes round the Inſtep and Heel. This preſſure makes the parts all round the Coronet to grow fleſhy and project over the Inſtep, ſo as to be conſtantly bruis'd by the upper part of the Hoof, eſpecially when a Horſe carries any great weight upon him, and by this means in the end ingenders a Quitor, which creeps ſo under the Hoof that it can ſeldom be removed without the loſs of a Quarter, the ſame as when there is a Fiſſure and Cleft, or rather worſe becauſe of the depreſſion and binding all round the upper part of the Foot with the diſtemperature of the Coronet, which often renders ſuch cures both very tedious and imperfect. Therefore this ought to be well look'd into, eſpecially in chuſing a ſaddle Horſe, that his Feet be tolerably ſhaped, ſmooth and cool, not narrow-heel'd, nor hoof-bound, neither weak-footed, nor too remarkably ſtrong, for moſt Horſes of this latter kind are alſo coarſe and chiefly fit for labour.

Other defects of the Feet.

Another thing that ought carefully to be look'd into, is that both his fore Feet be of equal ſize, for wherever this defect is the leaſt apparent, tho' it may proceed from a Horſe's uſing one Leg more than the other, as it happens to working Men who uſe the right Hand and Arm more than the eft; yet when one Foot is ſmaller than the other, it is a blemiſh, and carries ſome doubt that ſuch a Foot may in time fail and periſh, even as theſe do that have been hurt by accidents, or after old lameneſſes in the Shoulders, Legs, and muſcular parts, where the Foot at laſt periſhes in proportion as the muſcular and nervous parts ſhrink and diminiſh.

Another defect in Horſes Feet, is when they are flat and without depth. If ſuch a Foot happens to be ſtrong and the Hoof ſmooth, if the Soal be alſo firm, and the Frog no ways rotten or fleſhy, ſuch a Horſe will indure the Roads tolerably well. But when a flat Foot is ſhap'd like an oiſter, has many rings or wrinkles, if the Soal be ſoft, and the Frog fleſhy and ſpungy, it is a very great defect. Some Horſes are ſo remarkably faulty in this reſpect, that the Frog bunches out beyond the bottom Cruſt of the Hoof, that their Shoes muſt be made hollow, and the Plates ſo broad as almoſt to cover the whole bottoms of their Feet, to keep them from the Ground. But indeed ſuch Horſes are only fit for a draught, and not for the Saddle.

Some Horſes have tolerably good Feet, only that their Heels are low. Horſes that have long yielding Paſterns are the moſt ſubject to this defect, and alſo thoſe that have their Paſterns very ſmall, ſhort, and ſtanding almoſt quite upright; theſe have generally long Heels and flat Feet, and their Fore-Legs coming ſtreight down from the Shoulder to the Foot, without any bending of the Paſterns, and for this reaſon are frequently called Goat-leg'd. Many of the Horſes bred in the Fens are of this kind, have but an aukward uſe of their limbs, and make very bad travellers, and thoſe low-heeled Horſes which have very long yielding Paſterns, are apt to have their Heels wear quite to nothing upon a journey, and all the care imaginable in ſhoeing cannot prevent it.

A very high Heel is another extreme which greatly leſſens the value of a Horſe; for even where ſuch a Foot happens to be ſtrong and ſmooth, it is nevertheleſs, the cauſe of unſteadineſs in a Horſe's going, expoſes him often to trip and ſtumble, to ſprains in the Coffin and Paſtern Joints, &c.

There is one kind of Horſe, eſpecially among the coach and cart breed, very remarkable for a large deep foot; the Horn extremely thick and ſcaly, the Heels broad and mouldring, and are apt to grow ſo very faſt, that the Farriers when they go about to ſhoe ſuch Horſes, thinking to eaſe them of their great load, and to bring their Feet into a better ſize, pare and raſp them to ſuch a degree, that they leave their Feet much larger about the Coronet and Inſtep than at the bottom; ſo that they always look as if they went upon Pattens, which is not only very ugly, but ſuch Horſes are ſeldom good for much.

A very large Foot of any kind is to be avoided in a Horſe, even ſuppoſing it to be in itſelf firm and good. But when I ſpeak of a large Foot, I mean only when it is diſproportion'd to his other parts, for a large Horſe muſt of courſe have a larger Foot than a ſmall one. But when we ſee the Foot large and the Limb ſmall, in all ſuch it muſt be obſerved by thoſe who have experience, that the Bones and Sinews are alſo ſlender, which not only denotes weakneſs, but heavineſs and inaptitude to any briſk and vigorous action; and are therefore unfit for the Coach or Saddle, but to draw in a Cart or Waggon, or to carry a Burden.

Some object greatly againſt white Feet, as being generally worſe than thoſe of any other colour. Indeed when a Horſe has too many of his Feet white, they do not always prove the beſt, yet I have ſeen white-footed Horſes have their Feet ſuch as the ableſt Judges could not find fault with. When a Foot is ſmooth and tough, of a middle ſize, without wrinkles, neither too hard and brittle, nor too ſoft, and when the Heel is firm, open, and no ways ſpungy or rotten, and the Frog horny and dry, and the Soal ſomewhat hollow, like the inſide of a Diſh or Bowl, whatever be the colour, ſuch a Foot will for the moſt part turn out good, tho' the dark or black Hoof, where it reſembles that of a Deer, is generally the beſt; and for this reaſon thoſe who are the moſt curious about a Horſe's Feet, do not chuſe ſuch as have much white upon their Legs and Paſterns, to avoid their having too many white Feet.

The knowledge of the Shoulders.

The next thing to be regarded in a Horſe is his Shoulders, that they are not too much loaded; for a Horſe that has heavy Shoulders can never move well; on the other hand, one that has very thin Shoulders, with a narrow Cheſt or Boſom, tho' he may move briſkly while he keeps ſound, yet ſuch Horſes are generally weak, and the moſt eaſily lam'd in their Shoulders of all others. A narrow-cheſted Horſe turns his Elbows inwards towards his Briſket, and his Toes outwards, croſſes his Legs in travelling, and ſometimes cuts himſelf; and theſe ſort of Horſes, by their unſteadineſs, are as apt to trip and ſtumble as the Horſes that are thick ſhoulder'd, tho' they do not ſo eaſily come down; in the main they are of leſs value, for if they happen to get lame they are fit for nothing, being weak and ſlender; whereas thick ſhoulder'd Horſes are generally ſtrong, and if any accident happens that renders them unfit for other uſes, they will ſerve for a Waggon or Team, but a heavy-ſhoulder'd Horſe at beſt, is neither fit for the Saddle, nor for a Coach, nor indeed for any thing that requires expedition.

But that the Reader may underſtand what I mean, by a heavy-ſhoulder'd and thick-ſhoulder'd Horſe, it will be neceſſary to obſerve, that ſome Horſes have their Shoulders full, and yet no ways loaded; and when this proceeds only from the largeneſs of the Bones and Muſcles, and when theſe are firm, and not looſe and flabby, ſuch Shoulders will be ſufficiently pliable. All the Barbary Horſes I have ſeen are of this kind, and yet moſt of them have mov'd well in their natural ſhort quick action. But when the Shoulders are loaded with Fleſh, and the Breaſt or Boſom is alſo fleſhy; the Muſcles in this caſe are generally clog'd, which being the inſtruments of motion, ſuch Horſes can never ſtep out with freedom, but as if they went upon Stilts: But the worſt ſort of all others, are thoſe where the Breaſt projects and hangs over, ſo that the fore Legs are placed backwards, and appear as if they were ſtuck into a Horſe's Briſket. A Horſe of this make is the moſt dangerous of all others to the Rider, for when he ſtumbles it is ſcarce poſſible to recover him from falling, becauſe of the backward poſition of his limbs, and the load that lies forward upon his Breaſt; and therefore ſuch are abſolutely to be rejected.

Fleſhy Shoulders, of bad Conſeſequence.

Some Horſes are greatly charged with Fleſh, or rather may be ſaid to be groſs upon the top of their Shoulders and all over their Withers, which however is more an inconveniency than any hindrance to their motion, beſides that this fleſhineſs often abates with exerciſe. It is a blemiſh more to be obſerved in Colts and young Horſes before they have been hous'd and broke than afterwards. We daily ſee Horſes of this kind whoſe Shoulders in all other reſpects are flat and finely made, and move almoſt as well as thoſe that have no ſuch defects.

It may be obſerved, that ſome thick-ſhoulder'd Horſes have alſo very thick ſhort Necks: Theſe are uſually the moſt fleſhy of all others, and are worſe than thoſe that are thick ſhoulder'd, and at the ſame time ſmall and ſlender neck'd, having this additional ill quality, that they are almoſt always heavy upon the hand, and as themſelves are ſoon tir'd, ſo they ſoon tire their Riders.

The knowledge of the Shoulders is a thing very material in the chooſing of a Horſe, becauſe his good or ill Going depends ſo much upon the make and placing of his Shoulders, tho' thoſe who have had the greateſt experience will never fix upon a Horſe meerly from the ſhape of his Shoulders, becauſe in this reſpect the beſt judge may be miſtaken, unleſs at the ſame time he ſee him move with eaſe and freedom. Sometimes Horſes that have fine Shoulders move but indifferently, which may be owing to an over-great length of their Limbs, humours caus'd by undue exerciſe or other accidents; and therefore the beſt way to judge is from the motions of a Horſe; make him go at ſome little diſtance, and obſerve whether there is a correſpondence and harmony between the motion of the Shoulders and the motion of the Limbs, for if the Limbs do not harmonize with the Shoulders, but the motion ſeems to be more in the Limbs than the Shoulders, it is a plain Indication that ſuch a Horſe muſt want freedom in his Shoulders; but when the Shoulders, Knees, and Paſterns all act together in concert, and have but one ſpring of motion, then the Horſe may be ſaid to move well and with freedom.

The Limbs. The next thing to be conſidered is the Limbs, which ought to be free from Splents and Windgals. The Splents that grow on the flat part of the Shank Bone are of little conſequence, otherwiſe than that they are an Eye-ſore; but when a Splent is ſituated near the Knee Joint, or below near the Paſtern, it may endanger lameneſs, and if a Horſe does not go downright lame with it, he will be exceeding ſtiff, eſpecially after riding; but when the Splent lies on the inſide between the Bone and the Sinew, that Horſe is in danger of incurable Lameneſs, and his caſe is the worſe, that ſuch a Splent cannot be eaſily removed without hurting the Sinew.

Splents.

Windgals. Windgals are little looſe flatulent Tumours, containing no ſuppurated matter within them, but a very little Moiſture and Air. They are generally ſituated on each ſide the back Sinew towards the Heel, ſometimes on the Fore Legs, but moſt frequently behind, and ſometimes both before and behind, and are moveable to the touch. The ſame kind of Tumors are often met with about the Knees and Hocks, but then they are always attended with Lameneſs. When they come in the Hocks they are generally attended alſo with a Blood-Spavin or Variſſe, as the French more properly term it; but wherever they happen to be, they muſt leſſen the Horſe's value exceedingly, being either the effects of weak Limbs, or very hard riding and abuſe.

The Limbs ſhould therefore be clean, free from Splents and Windgals, the Knees ſhould be ſtreight and not bending: It is always a ſign of ſtrength and activity when the Shin and Shank are thin, the Back-Sinews ſtrong and well brac'd, with a perceptible diſtinction between the Sinew and the Bone, ſo that the ſmall of the Legs be not of too round a make, but according to the Jockey's terms, flat and lathy. The Paſtern-joints clean, eſpecially the lower Paſterns, that they may be free from Ring-bones and other ſwellings near the Coronet, which are ſometimes of ill conſequence. The Hocks ſhould alſo be lean and dry, free from Curbs, Spavins of all kinds, and from Puffs and flatulent Swellings, which upon every alternate motion, or upon the preſſure of the Finger, ſhift from ſide to ſide; for all theſe are great faults in a Horſe that cannot be eaſily remedied.

Ring-bones, Curbs, &c.

The next thing to be conſidered is the Body or Carcaſs, which ought not to be too ſmall and ſlender; for a ſmall carcaſs'd Horſe is generally weak. On the other hand, a very large carcaſs'd Horſe proves often heavy and unactive, and when he happens to be underlimb'd it

The Carcaſe.

it is reckoned a great Fault, tho' I have known this remark oftentimes fail, and Horſes, that have been reckoned very much under-limb'd, prove as ſtrong, and fully as ſerviceable as any other.

A low Back is another fault that almoſt every body complains of, and betokens weakneſs, tho' a moderate ſinking below the Withers is not at all amiſs when the Back is otherwiſe ſtreight. When this ſinking is to no extream, the Forehand generally riſes well. But when a Horſe has a low Back, and is higher behind than before, it is not only ugly, but ſuch Horſes are generally weak, are apt to be pinch'd in their Shoulders, and have an aukward way of going, which is owing to the heavineſs of their hind parts, which hinders them getting on.

Some are fond of Horſes that are home rib'd, which indeed is a property that denotes both Beauty and Strength, as thoſe that are open rib'd are looked upon to be weak and looſe; but in ſome Horſes the ſhort Ribs approach ſo near the Haunches, that they have ſcarce liberty to breathe, and ſuch Horſes are the moſt out of wind of any other when put upon hard exerciſe, and eaſily go broken winded, as I have often obſerved. But a Horſe that is open and looſe in his Flanks, like a Greyhound, is liable to many diſadvantages which would be too tedious here too relate; ſuch are always narrow over the Chine, have little or no Belly but what is forced by art and feeding; and tho' we find ſome of this kind more vigorous than others, and even exceed all expectation, yet the generality of ſuch Horſes are ſeldom fit to carry a great weight, or to hold out in hard riding. Some are great admirers of ſhort-back'd Horſes, which is a right way of judging ſo far as this ſtands in oppoſition to a very long Back. But ſome Horſes Backs are ſo very ſhort, notwithſtanding they are otherwiſe of a good ſize, that they ſeem to be drowned under common furniture. But when a tall Horſe happens to have a ſhort Carcaſs, and very long Legs like a Spider, ſuch a Horſe is ſeldom good for much. If a Horſe's Back be ſhort, his whole Body and Limbs ought to be ſhort, and then it denotes ſtrength and firmneſs; but moſt of theſe make but a ſlow progreſs on a Journey, tho' they will indure and hold out as long as any other, unleſs they be urg'd on with Horſes of greater ſpeed.

It always denotes ſtrength in a Horſe when his Carcaſe is of a moderate ſize. His Ribs large, his Flanks not hollow but ſmooth and full, with a ſtreight Back, or but a very little ſinking, his hind Parts or uppermoſt Haunches not riſing higher than his Shoulders. A Roach Back, *viz.* where a Horſe's Back is a little arched behind the Saddle, tho' it adds no great beauty to a Horſe, many of this kind being alſo flat rib'd, yet they are for the moſt part ſtrong and durable, and often prove fit both for hunting and the road.

A Horſe's Wind to be regarded.

Another thing to be regarded in a Horſe is his Wind, which may eaſily be known by the motion of his Flanks, and ſome other ſigns. Many Horſes breathe thick, and yet are not broken-winded. A thick-winded Horſe fetches his Breath often, and ſometimes rattles and wheeſes. This will happen to any Horſe that is foggy and foul fed, without ſufficient exerciſe, eſpecially to Horſes that are newly come off rank Paſture, where they have lain long. But if a Horſe has been in good keeping, and had due exerciſe, and yet theſe ſymptoms appear, it is to be ſuſpected there is ſome defect either accidental or natural, ſuch as a narrow Cheſt, or ſome obſtinate cold that has contaminated his Lungs: This ſymptom ſometimes happens to Horſes that are ribb'd home too cloſe, which will cauſe ſuch to be ſhort breath'd when they are hard rid. But a Horſe ſeldom comes to be thoroughly broken-winded till he is ſeven or eight years old, the reaſon of which I ſhall give hereafter, when I come to treat of thoſe Maladies. In the mean time I ſhall obſerve, that the beſt way to know a broken-winded Horſe, is to obſerve his Flanks while he ſtands quiet in the Stable. A broken-winded Horſe always pinches in his Flanks with a very ſlow motion and drops them ſuddenly, which any one with a little obſervation will eaſily perceive, and when very bad, coughs vehemently and often farts, with a continual working in his Fundament; his Noſtrils alſo work as if he was in a Fever, and yet no ſymptoms of great heat and inflammation, and ſeldom any abatement in his appetite. Theſe are the ſureſt ſigns to know a broken-winded Horſe. In other caſes, when a Horſe is only thick-winded from any accident or natural defect, the beſt way to find that out, is to put him into briſk exerciſe, and he will ſoon diſcover his infirmity.

Other Defects in Horſes to be obſerved.

I need ſay nothing of the Glanders, becauſe few Horſes are offered to ſale with this Malady. However, one ſhould always feel under a Horſe's Jaws, that he be free from inflated Kernels, eſpecially if he be turn'd of ſeven years old, for at that time there is danger, even tho' there be no running at his Noſe. But looſe moving Kernels are very common to young Horſes when they happen to catch cold, eſpecially thoſe that have never had the Strangles. Nevertheleſs theſe ſymptoms are eaſily removed, except when the Kernels are fixed to the Jaw Bone, and then they are to be ſuſpected.

There are many other defects that may be taken notice of in Horſes, both with reſpect to their ſhape and their action, which very much leſſen their value. A Horſe that has a large fleſhy Head, with a groſs thick Neck, will always go heavy on hand, as I have already hinted. Leaf-ear'd Horſes that have broad dangling Ears like the Leaves of a Bay-Tree, are altogether ungraceful, and have much of the Cart Breed. A Horſe that has a Deer or Stag's Neck, that is when it bunches out with a ſemicircle before, and ſinks on the Creſt where it ſhould riſe higheſt, is not only ugly but unpleaſant to the Rider, and the Horſe-Courſers are apt to ſay of ſuch Horſes, that their Necks are turn'd the wrong ſide upwards. A Gooſe-rumpt Horſe has much of the Cart Breed, and is for the moſt part ſtubborn and ſluggiſh. A Horſe that has his Hocks diſtant and very wide, ſeldom moves well, but is apt to cut and ſhave by croſſing one Leg over the other. On the other hand, a Cat-ham'd, or Batle-ham'd Horſe, as ſome term it, *viz.* where the Hocks approach near together, and the Feet ſtand out wide and ſtraddling, will always appear with a remarkable meanneſs, if his other parts are never ſo well moulded, beſides that it often denotes weakneſs. Fleſhy-leg'd Horſes are uſually ſubject to the Greaſe, and other infirmities which I ſhall not here ſtay to mention.

The Tempers of Horſes.

The Temper of a Horſe is what ought alſo to be regarded; becauſe if a Horſe's Temper be good it very much enhances his value, whereas if it be vitious it expoſes him to many accidents. A ſullen ill-condition'd Horſe indangers every one that comes near him; and very often will not ſpare his beſt friends. Some are only enemies to Men, but with other Horſes are tractable and quiet. Theſe have not always the moſt true courage, as I have often obſerved. They are contiuually in motion when any one approaches towards them, expecting to be drub'd, and are therefore in a conſtant ſtate of enmity and defence. Others are quiet and tractable to Men, and yet are ſo miſchievous to other Horſes, that they will ſcarce ſuffer any one to come within their reach. Many of this ſort have true metal and courage, but expoſe both themſelves and other Horſes to kicks and bruiſes, which prove troubleſome and ſometimes expenſive to the owner, whereas a Horſe of the trueſt courage is uſually the beſt temper'd, loving to his Maſter and Keeper, and never ſhews his Metal compleatly, but when he is urg'd on by ſome noble incentive, *viz.* in

Viciouſneſs.

a Chaſe or running Match, where there are other Competitors; or when he carries a good Horſeman, he will then diſcover a ſort of complacency, and ſeem to act every way in concert with his Rider. But the Reader will be apt to queſtion, how it is poſſible for any one to find out the Temper of a Horſe without trial? It muſt indeed be confeſſed, that a man who has had but ſmall experience, can know very little of the Temper of a Horſe, and even thoſe who have had the moſt experience, can only gueſs upon a ſuperficial knowledge of a Horſe, ſo as ſometimes to avoid buying ſuch when they are offered to ſale; for ſome Horſes are exceeding ſly and ſubtil, will ſhew but little of their temper when they are cautiouſly handled, and yet will ſteal every opportunity to do miſchief, as all who have been us'd much among Horſes muſt have frequently obſerved. A vitious Horſe generally lays back his Ears cloſe to his Pole, tho' this is not always a ſure preſage of Vice, for ſome very harmleſs Creatures lay back their Ears merely out of tickliſhneſs, or from a playful diſpoſition, but at the ſame time he puts back his Ears will look pleaſant with his Eyes, and with his Mouth catch hold of the Crib, whereas a vitious Horſe at the ſame time he lays back his Ears ſhews the whites of his Eyes, and looks ſullen and dogged. Some vitious Horſes have a plain manifeſt frown, which they diſcover at all times, and give their Countenance ſuch an angry Aſpect, as will eaſily enough be diſcovered by thoſe who have been us'd among Horſes. Beſides ſuch Horſes always ſtand as it were in a poſture of defence, having their Heads rais'd and lofty, and one of their hind Legs advanced forwards reſting upon the Toe, ready to laſh out at the firſt Perſon that offers to come near them; and this may further be obſerved of a very vitious Horſe, that he never will give a pleaſant look even to the Perſon that feeds him.

Fear. Fear is another ingredient in a Horſe's Temper, that muſt very much leſſen his value. A fearful Horſe both endangers himſelf and his Rider, more than a vicious Horſe that has Courage. Almoſt every day affords us inſtances of People being hurt, and ſometimes killed by fearful ſtartling Horſes, and many ſuch Horſes are utterly ſpoil'd and ruin'd, by the accidents their Fear expoſes them to. Beſides that Fear in a Horſe is hardly ever to be overcome until he grows very old and uſeleſs, or when he happens to be continually harraſs'd with travelling, in the conſtant view of all manner of Objects, and even then any thing new and uncommon will ſtill revive his natural Temper and Diſpoſition. A fearful Horſe may be often known at firſt ſight by his ſtartling, crouching and creeping.

Fretfulneſs A Horſe that is very hot and fretful is no leſs to be avoided. But here I would diſtinguiſh between an eager craving Horſe, that ſtrives to be the firſt in the Chaſe, the foremoſt in the Field, and one that goes always upon the fret, which is properly what I mean here by a hot Horſe. The one goes out calmly, and never ſhews his metal till a proper opportunity offers.

He has thoſe qualities that reſemble prudence and courage, the other intemperate heat and raſhneſs. A hot Horſe begins to fret the moment he comes out of the Stable, and continues in that humour till he has quite fatigu'd himſelf, which for the moſt part ſoon happens. Such Horſes are not able to endure much hardſhip, being for the moſt part but poor feeders, and when they come to go a journey they ſoon loſe their Fleſh, have a carion-like look, and ſeldom perform it without intervals of reſt. They rarely laſt long, for this temperature expoſes them to many accidents and diſeaſes.

Dullneſs.

A dull heavy flegmatick Horſe, is the very reverſe of one that is hot and fiery, and his qualities are eaſily known, notwithſtanding all the arts of the Dealer to put life and ſpirit into him. A ſharp pair of Spurs, the frequent cracking of the Whip, a Stimulus under his Tail, will cauſe him to ſhew ſomewhat of metal, and carry himſelf to the beſt advantage; but ſtill any tolerable judge will eaſily perceive that all his action is forced, and no ways natural. He moves as if he was in a hurry, and yet with many tokens of heavineſs. Nevertheleſs ſome ſuch Horſes are of more real value, and laſt much longer than thoſe that are hot and fretful, becauſe they are ſeldom hurt with labour, nor expoſe themſelves much to accidents, and if they prove unfit for the Saddle, may be ſerviceable for many other purpoſes.

Crib-biting.

There is another ſort of Vice, or rather ill Habit, to which many Horſes are addicted, which, ought alſo to be avoided in chooſing a

Horſe, and with which I ſhall conclude this part of my Subject, and that is Crib-biting, or the Tick as ſome call it, *viz.* when Horſes catch hold of the Edge of the Manger, ſuck in the Air and ſwallow it down in gulps, till they are ſometimes ſo full that they are ready to burſt. Some do it only on their Collar Reins, and ſome on every Poſt and Gate they can come at. This Vice is more common in London than any where elſe, and may either come upon Horſes from very low feeding, while they are young and have craving Appetites, or perhaps by ſtanding much at the Crib while they are ſhedding their Teeth, for then their Mouths are hot and their Gums tender and itching, which may readily make them ſuck in the Air to cool their Mouths; but young Horſes are the more apt to imbibe this ill habit, when they ſtand next thoſe that crib, for I have often obſerved young Horſes take it by imitation, tho' I have alſo known abundance take to it, that have neither been in the ſight or hearing of any other: This is a Vice in a Horſe that cannot be eaſily hid, for he does it openly in his Stall, even tho' he may have been often beat for it. But the beſt way when one looks into a Horſe's Mouth for his Age, is to take notice that his fore Teeth are not worn, for if they be worn, it is a ſign he cribs; and when a Horſe has been long accuſtomed to this Vice, the Teeth will not meet in ſome places by the breadth of one's Finger. The Coach Breed are the moſt ſubject to it, and a Horſe never loſes this ill Habit during his whole life; and indeed all the methods hitherto uſed to break it have proved ineffectual. Horſes that crib are but of ſmall value; they drop a great part of their Food unchew'd, which makes them almoſt always look lean and jaded, with a ſtaring Coat, and conſequently few of them are able to indure much labour, beſides that they are frequently ſubject to the Gripes and other Maladies, which are owing to their continual ſucking and filling themſelves with Air.

CHAP. IV.

Of the Shape and Make of a HORSE, and how his Parts ſhould be framed, in order to appear comely and beautiful, with ſome Obſervations on the Colour and Marks of HORSES.

THO' the moſt experienc'd Horſemen are not always agreed in ſome points relating to the Shape, Make and Goings of a Horſe, yet they almoſt always accord in this, that there ought to be a juſt proportion in all his Parts. That even when he is taken to pieces, and examined ſingly in his particular Members, tho' ſome defects may appear, yet when they all bear a juſt correſpondence one to another, and concur in ſuch a manner as to render his action eaſy, juſt, and regular, ſuch a Horſe cannot be greatly diſagreeable, but will, for the moſt part, move well, and with a tolerable good grace. On the other hand, ſuppoſe a Horſe has ſome parts exquiſitely fine, and others indifferent, which frequently happens, it will mar his beauty, and cauſe him to look diſagreeable, and for the moſt part affect his Gait and Action.

The proper ſhape and make of a good Horſe.

In order to have a Horſe beautiful and finely made, it has been agreed on all hands, that his Head ſhould not be long nor too large, rather lean than fleſhy. His Ears thin and narrow, and of a becoming length, well ſet on, pointing inwards. His Brow or Forehead not too broad and flat. His Noſe ſomewhat riſing and of a good turn, his Noſtrils wide and thin, his Muzle ſmall, his Mouth neither deep nor too ſhallow, with a Star or Snip down his Forehead, or a Blaze, which is no ways unbecoming, unleſs it be too large and diſproportion'd. Horſes that are thus mark'd, have generally one or more of their Feet white, which is alſo very beautiful and looks lively. His Jaws ſhould be thin and ſufficiently wide, not approaching too near together, nor too high upwards towards the Onſet, that he may have ſufficient room to carry his Head eaſy and in good place. His Eyes well formed, ſprightly and of a middle ſize. His Neck ſhould be arched towards the middle, ariſing by a beautiful gradation out of his Breaſt and Shoulders, the Muſcles thereof diſtinct, but no where overcharg'd with Fleſh, growing ſmaller and thinner, as it approaches towards his Head. His Shoulders ſhould be thin from the Withers, with a gradual inlargement downwards, that his Boſom or Breaſt be not too narrow nor too groſs. His Fore-Legs ſtreight and well placed: His Joints lean and bony: His Knees not bending, and his Paſterns not too long: His Feet round and ſmooth, and his Sinews firm and well-braced: His Carcaſe rather round than flat: His Back not too low, and for ſtrength and durableneſs pretty even and ſtreight. His Ribs rather home than open, as they approach towards his Haunches: His Britch round, and the Muſcles not too fleſhy but diſtinct: His Hocks or Gambrels neither ſtanding too wide, nor too near together: His Hocks ſhould be lean and no ways puffed or fleſhy: His Paſterns ſhort, his Legs flat and thin, and his Tail ſet on in a good place, rather high than low, riſing upon every motion of his Body. The more theſe properties concur in any Horſe the more beautiful he muſt be, eſpecially when they correſpond and agree in due proportion one to another; and the more a Horſe is wanting in theſe, the more plain and ordinary he will appear.

The Marks and Colour of Horſes.

I ſhall now proceed to ſay ſomething concerning the Marks and Colour of Horſes, ſeeing ſo much of the beauty of a Horſe depends upon his being well-mark'd and of a good colour; and alſo becauſe his good or bad properties are ſometimes denoted from his being of this or that Colour, or his having ſuch and ſuch Marks. Tho' indeed theſe ſignatures are not always to be depended on, for daily experience teaches us, that however true theſe Obſervations may prove in the main, yet we often meet with good Horſes that are very ill mark'd and of bad colours, and ſometimes very bad Horſes that have almoſt all the beauty that colour and marks can give them. However, it is neceſſary for thoſe who have any concern among Horſes, to be more or leſs acquainted with ſuch things.

The principal Colours of Horſes.

The chief and principal Colours are the Bay, the Cheſnut, the Black, the Brown, the dappled Grey and Sorrel; for the White is for the moſt part originally Grey, and turns ſooner or later into White, as his Limbs happen to be lighter or darker; and the Light Grey Colts that grow the ſooneſt White, have generally little or no dark mixture about their Joints.

The Bay.

The Bays, perhaps ſo called from their reſembling the Colour of dry'd Bay Leaves, are of various degrees, from the lighteſt Bay to the dark, that approaches the neareſt to the Brown, but always more ſhining and gay. The bright Bay is an exceeding beautiful colour, becauſe a bright Bay Horſe has often a reddiſh daſh, with a gilded aſpect, his Main and Tail black, with a black or dark Liſt down his Back. Alſo the middle colours of Bay have often the black Liſt with black Main and Tail. And the Dark Bays have almoſt always their Knees and Paſterns black, and we meet with ſeveral ſorts of Bays, that have their whole Limbs black from their Knees and Hocks downwards. The Bays that have no Liſt down their Backs, are for the moſt part black over their Reins, which goes off by an imperceptible gradation from dark to light towards the Belly and Flanks. Some of theſe incline to a Brown, and are more or leſs dapled. The Bay is one of the beſt Colours, and Horſes of all the different kinds of Bays are commonly good, unleſs when accidents happen to ſpoil them while they are Colts.

The Cheſnut and Sorrel.

The true Cheſnut is generally of one colour, without any ſhade or gradation: His Hairs are often compounded of three colours, the Root light, the middle dark, and the Points of a pale brown, which makes an agreeable mixture, and differ from the Sorrel in this, that the mixture of the Cheſnut is not ſo diſtinct and apparent to the Eye, eſpecially at any diſtance, becauſe the Hairs of the Sorrel are often of ſeveral colours intermix'd, wherein the red or Fox colour generally predominate. Many cheſnut Horſes have their Manes and Tails very near the colour of their Bodies; many of them have but little White about their Legs, and frequently no mark, whereas the Sorrel have generally a good deal of White about their Legs and Paſterns; many of the Sorrels have a large Blaze, and not a few are bald all over the Face, while their Manes and Tails are ſandy or of a flaxen Colour. Both the Cheſnut and Sorrel are of degrees darker and lighter, and I have ſeen ſome Cheſnut Horſes with Manes and Tails as light as the Sorrel, and the Hair all over their Bodies approaching towards a fallow Colour, only with a ſort of beautiful Cheſnut ſtain. There are many good and beautiful Horſes both of the Cheſnut and Sorrel; but the latter, when they have much White about their Limbs, are apt to be more faulty in their Feet than thoſe that are more uniform iu colour, and they are alſo apt to be more tender in conſtitution. When a cheſnut Horſe happens to be bald or party-coloured, or to have white Legs, which may be owing to ſome extraordinary affection in the Dam, or ſome improper mixture in the Breed, ſuch Horſes are not very agreeable, for Cheſnuts are the leaſt tainted in their colour of any other, and moſt people prefer the Cheſnut to the Sorrel, both in point of beauty and goodneſs.

The Brown.

The Brown is a colour not altogether ſo beautiful as the Bay or Cheſnut. Horſes have alſo their degrees, ſome being light and ſome very dark. They have almoſt all black Manes and Tails, and often their Joints are black, tho' not ſo ſhining as the Bays, but ruſty. Almoſt all brown Horſes grow gradually lighter towards their Bellies and Flanks, and many are light about their Muzles. The moſt beautiful are thoſe that happen to be finely dapled, for the plain Brown are eſteem'd more ordinary. Many of them are coarſe, but ſtrong and ſerviceable, fit for draught, for burden, or for war.

Black Horſes are very beautiful, eſpecially when they are of a jet ſhining black and well mark'd, and have not too much white. For as a great deal of white, eſpecially when it ſpreads round their Eyes, and a great way up their Legs, adds nothing to their beauty, ſo neither does it add any thing to their goodneſs. The Engliſh black Horſes have more white than the black Horſes of any other Country. I have known many fine Spaniſh Horſes, ſome Arabs, and one Egyptian (the only one I ever ſaw of that Country) all without any white, and the Dutch and Daniſh Horſes ſeldom have much; tho' a Star or Blaze, and ſometimes a white Muzle, and one or more of the Feet tip'd with white, always looks beautiful and lively, and is no diminution to the goodneſs of a Horſe, but moſt think an addition, from an opinion that Horſes without Mark are generally ſtubborn and ill-conditioned. Some black Horſes have brown Muzles, are browniſh on their Flanks and between their Hips. Theſe are often called black Browns, as they are not a perfect Black, but approach near to the colour of a tawny black Hound; ſome are of a lighter colour about their Muzles, and are call'd mealy-mouth'd Horſes; and of this ſort are the pidgeon-ey'd Horſes, which have a white Circle round their Eye-Lids, and their Fundaments often white. But after all, I have found many of the Engliſh black Horſes, eſpecially of the largeſt breed, not ſo hardy as the Bays and Cheſnuts, &c. Thoſe that partake moſt of the Brown, are generally the ſtrongeſt in Conſtitution.

The Grey.

The Greys are ſo diverſify'd in colour, and ſo common and well known, that it would be a needleſs curioſity to deſcribe them particularly. The dapled Greys are reckoned the beſt, and are to be found in moſt parts of the World. The Silver-Grey is extremely beautiful, and many of them very good. The Iron-Grey with light Mane and Tail have alſo a gay appearance, but are not accounted the moſt hardy. The light plain Grey and the Pidgeon-coloured Grey, ſoon change and turn white, as all other Greys do in proceſs of time. The dapled Grey keeps his firſt colour the longeſt, which is a ſign of ſtrength and durableneſs. Some of them I have known pretty old before they have chang'd, and never ſo perfectly as not to retain ſome veſtiges of their native colour. The Nutmeg-Grey, where the Daples and other mixture participates of the Bay or Cheſnut, is not only exceeding beautiful, but moſt of the nutmeg-coloured Horſes turn out very hardy and good.

TheRoan. The Roans are a mixture of various colours, wherein the white predominates. Many of them turn out much better than they appear to be. Some are exceeding good, and thoſe that have a mixture of the Bay or Nutmeg colour are ſometimes tolerably handſome and beautiful. The Roans have a general reſemblance to each other, and yet a very great diverſity: Some are ſo ſtrew'd over with white, as if they were powder'd or duſted with Flour, and ſome as if Milk had been ſpilt all over their Buttocks. Others as if they were powdered with Soot or Lamp-black, and ſome as if their Faces had been dip'd in a bag of Soot. Many of them are good road Horſes and hardy, which has encouraged this Breed more of late than uſual; and I have ſeen ſome Roans from abroad that have look'd very well in Furniture.

The Strawberry. The Strawberry approaches pretty near the Roan in ſome things, but in moſt reſembles the Sorrel, being often mark'd with white on his Face, and Legs, which we ſeldom obſerve perfect without mixture on the Roan. The Bay mixture in the Strawberry is alſo of the higheſt colour, and makes him look as if he was tinctured with claret; ſome of this ſort are both handſome and good, but are not very common

The Fallow and Dun, &c.

The Fallow colour, the Dun and the Cream colour, have all one common reſemblance, and moſt of them have a Liſt down their Backs, with their Manes and Tails black. The Mouſe, Dun, and Lead colour are the moſt ordinary, and becauſe the Liſt down their Backs goes off with a ſoft imperceptible ſhade, like what we obſerve on the back of an Eel, are from thence calledEeel-back'd; few people chuſeDunHorſes, tho' I have known Horſes of this colour prove uſeful in the hands of country people. The Fallow and Cream-colour'd Horſes are many of them both good and beautiful. Thoſe are generally the beſt, that beſides their Manes and Tails have their Muzles and their Joints black or cheſnut, and their Colour a little inclin'd to cheſnut; tho' I have known ſome with Manes and Tails of a Silver colour, not only extremely beautiful, but very good and uſeful. The Fallow and Tawny duns are often ſhaded with a darker colour, and ſometimes faintly dappled, and look very fine in a ſet, when they happen to be well matched.

There are many other colours of Horſes produced out of the great diverſity that are to be met with every where, which would be endleſs and of no great uſe to deſcribe, as the Peach colour, Starling, and Flea-bitten, &c. and all theſe participate more or leſs of ſome of the Colours already mention'd. I ſhall only farther take notice, that ſometimes Horſes turn out very finely ſpotted, ſome like Leopards or Tygers, ſome like Deer, with black, yellow, red, or other gay Colours, and when theſe happen alſo to be comely in ſhape and appearance, they are generally reſerv'd as preſents for Princes, or other great Men, tho' perhaps more for their ſingularity than any ſuperior excellency in them. Others again are ſo diſagreeably diverſify'd in their Colours, and in ſuch a remarkable manner, that no Gentleman would care to be ſeen upon their Backs, or even ſuffer his Servants to make uſe of them; wherefore ſuch are uſually condemned to the meaneſt drudgery, and no properties they can have will be ſufficient to recommend them to any other uſe.

The Marks.

As for Marks, I need ſay but little concerning them, after what I have already hinted, in deſcribing the Colours. Some have reckoned Horſes to be lucky or unlucky, as they happen to be this or that way mark'd; but I believe few Perſons in our times are ſo ſuperſtitious as to regard ſuch things. Others have been ſo curious as to lay much ſtreſs upon them, and to denote all the good or ill qualities of a Horſe from his Marks; but as I can ſay little of this from experience, I ſhall therefore only take notice, that a Horſe always looks the more beautiful for being well mark'd, and a Horſe without Marks has always a deadneſs in his aſpect. A Star is the moſt common of all Marks, and where that is wanting, it is often ſupply'd with an artificial one. When the White deſcends pretty broad towards the Noſe, it is called a Blaze: When it deſcends into a ſmaller line it is called a Snip, and when moſt of a Horſe's

On the Face.

Face is white, he is then ſaid to be bald. All theſe Marks are beautiful when they are not to extremes; for a very large Star is not reckoned ſo beautiful as one that is of a moderate ſize, neither is that Baldneſs that ſpreads over a Horſe's whole Face and Cheeks any ways becoming, as it gives him the looks of an Ox; and ſuch Horſes are often plain-headed. When the White of a Horſe's Face is divided in the middle, or any other part, or when a Blaze or Snip runs awry to one ſide, it looks ſomewhat diſagreable; tho' perhaps it may be no diminution to a Horſe's goodneſs. Some black Horſes have their Stars or Blazes fring'd round with a mixture of black Hairs; which looks very well, only ſuch Horſes (as I have obſerv'd already) are apt ſoon to grow grey fac'd and look old, as are ſome of the Browns. But when the Bays and Sorrels have their Stars or Blazes fring'd, it is generally with their own colour, or lighter, and ſeldom has that effect.

On the Feet and Legs.

Now as to the white Marks upon the Feet and Legs of Horſes, they uſually correſpond with the Marks on their Faces. Bald Horſes have generally a good deal of White about their Legs, and often all four are white, which in them is not unbecoming. Horſes with large Blazes have often all their four Feet white alſo. But a Horſe that has no Mark on his Face, or but a ſmall one, never looks well with white Legs, eſpecially when the White riſes above the Fetlock. On the other hand, a bald Horſe, or one that has a Blaze without any of his Feet white, is but ill mark'd; and therefore a Horſe always looks beſt, when there is this correſpondence and agreement in the Marks; a Horſe that has his near Feet both before and behind White, and his off Feet without any white, is but indifferently mark'd: The ſame where the Marks are only on the off Feet, without any White on the near Feet. Some diſlike Horſes for being travers'd or croſs mark'd, *viz.* the near Foot before, and the off Foot behind white, or on the contrary when the off Foot before, and the near Foot behind are only White. Theſe are uſually judged to be the beſt mark'd, that have only the near Foot behind White, or both Feet behind White, or where the near Foot before, and both the hind Feet are White, eſpecially when, at the ſame time, a Horſe has a large radiated Star or a ſmall Blaze on his Face. When the White about the Feet are indented with Black, or any other colour towards the Coronet, theſe Feet are thought to be generally good, and when the Coronet is ſpotted like Ermine, the Mark is ſo much the better. But where a Horſe's Paſterns, Hoofs, and all his four Legs are White, eſpecially when the White riſes above the Knees or Hocks, it looks ugly, and a Horſe thus mark'd has too much of the Pye-bald, which are ſeldom fit for Gentlemens uſe.

The Feather.

The Feather is another kind of diſtinction which we often obſerve, eſpecially on Stone Horſes, and ſuch Geldings as have ſhort Hair, and are finely coated. Some are of a round Figure, and ſome long and narrow, in the true penniform Shape, or like an Ear of Barley, The round are often on the Forehead, ſometimes on the Briſket and Shoulders, and look like Embroidery. Thoſe on the Neck lye immediately under the Mane, and run down towards the Withers. When the Feather happens on both ſides the Neck the Mark is reckoned exceeding good and beautiful: Sometimes Feathers run down the fore Arms, and ſometimes on the Thigh, and run towards the Dock, and they may be obſerv'd on ſeveral other parts of a Horſe. But wherever they happen to be, they are almoſt always ſigns of Goodneſs, and ſome of them are exceeding beautiful.

PART II.

Of the Anatomy of a HORSE.

Some Preliminaries relating to the Anatomy of a Horſe, neceſſary to the Knowledge of his Diſeaſes.

HAVING, in the firſt Part of this Treatiſe, begun with the common Names of the external Parts of a Horſe, with other uſeful things relating to this Subject, I ſhall now proceed to give an account of his Structure and Mechaniſm, wherein I ſhall be as brief as poſſible, having already treated the Anatomy of a Horſe at ſome length in my *Farriers Guide*. However, I intend to include as much in this place as may be neceſſary to thoſe who have not time, leiſure, or opportunities, to ſtudy the knowledge of Anatomy; and ſhall endeavour to be ſo plain and eaſy, that even thoſe who have not had the advantages of a liberal education, may be able from hence to form a tolerable good notion, both how to underſtand the Diſeaſes of Horſes, and the beſt manner of curing them. In order to which, I ſhall premiſe ſome things by way of Introduction, for the better underſtanding the Parts and Mechaniſm of a Horſe, as they are anatomically deſcribed.

A

A Horſe and all other Animals are in the Embrio firſt of a ſoft contexture, which conſiſts of ſuch Properties as in time grows into Fleſh, Blood, and Bones, capable of being organiz'd, and animated with proper Life.

The ſeveral parts that Horſes and all other Animals are made up of.

All the parts of an Animal, from its firſt rudiment or beginning, is made up of Fibres and Threads, and retain the ſame contexture in all their changes, whether into Membranes, ſolid Fleſh, or into Bones, or Ligaments, which muſt be plain to every one that will but take the trouble of a ſuperficial inquiry into ſuch things.

The component parts that produce all the neceſſary functions of Life, conſiſt of Membranes, Muſcles, Glands, or Kernels, Blood Veſſels, Lymphaticks, Ligaments, Cartilages, and Bones. Horſes and other brute Creatures have alſo their Hair, partly for a cover to keep them warm, and partly for ornament, as the Hoofs anſwer to the human Nails, and are a defence to their Feet.

The Membranes are thin expanded Parts, reſembling a fine Web, of which the Dura Mater that involves the Brain, is by ſome reckoned the principal, and to give origin to all the other Membranes of the Body. The Pia Mater, which adheres cloſe to the ſubſtance of the Brain, is alſo a Membrane of ſingular contrivance and uſe. All the Muſcles and Bones are covered with their proper Membranes, and one very remarkable double Membrane, like a Pillowbear, involves the whole Guts, which are alſo in a great meaſure membranous.

The Muſcles are fleſhy Bodies, which may be eaſily ſeparated one from another, being each ſkinned over with a proper Membrane, with their extremities more or leſs tendinous and ſinewy, and are ſo commodiouſly placed by their Origins and Inſertions, as to move each reſpective part to which they belong, and alſo to act in concert one with another, in all the various motions of the Body.

The Blood-Veſſels, conſiſting of Veins and Arteries, are thoſe Conduits or Pipes, by which the Blood is carry'd from the Heart to all parts of the Body, for its nouriſhment and ſupport: The Arteries convey it to all the Extremities, and the Veins return it from the Extremities to the Heart; from whence it is detached back again into all parts, and returned by the Veins, in a continued courſe of Circulation.

The Lymphatick Veſſels carry a lymph or pure Water, ſeparated by the Lymphatick Glands, which is mixed with the Blood to preſerve it thin and fluid.

The Nerves are ſmall white Chords or Threads detach'd, from the Brain and Pith of the Back into all parts of the Body, and are the chief Inſtruments of Senſe and Motion.

The Glands or Kernels are made up of Veſſels ſo exquiſitely fine and ſmall, that in many of them they are imperceptible to the naked Eye, for the moſt part rolled up together like a Clue, and are judged to be the terminations and endings of Veins and Arteries, whereby ſome Juices are ſtrained to ſuch tranſparency and fineneſs as fits them to be re-united with the Blood; others only ſeparate excrementitious Matter.

The Ligaments being of a middle nature, between a Sinew and a Griſtle, are chiefly of uſe to tye the Joints together, ſo as to preſerve and keep them in their proper place, without impeding any of their neceſſary Motions.

A Griſtle or Cartilage is more compact and ſolid than a Ligament, but not ſo hard and brittle as a Bone. Where the Cartilages are thin and pointed, as the ſhort Ribs, &c. they are endow'd with a ſpring or elaſticity, by which they cannot be ſo eaſily broke as if they were of a harder conſiſtence. They are alſo of uſe to cover the ends of the Bones, to preſerve them from wearing, and to facilitate their Motions.

The Bones are the hardeſt of all the parts of an animal Body: They are inſenſible of Pain, as are alſo the Ligaments and Cartilages, except when they turn carious by inveterate or long continued Diſeaſes: They are the chief ſupporters of the whole animal Fabrick, to which they alſo give Shape, and are like Levers for the Muſcles to play upon, being united together by many Junctures, for the conveniency of Motion. I ſhall therefore begin with a ſhort Deſcription of the Bones, and proceed to the other Parts, in their proper Order.

CHAP. I.

Of the Bones of a HORSE, with the Ligaments and Cartilages.

The Bones of the Head.

THE firſt that naturally offer to be deſcrib'd are the Bones of the Head, which, including thoſe peculiar to the Skull, and thoſe that are common to it and the upper Jaw, are reckoned ſeventeen in number. But I ſhall chiefly take notice of thoſe that are the moſt obſervable and plain to be ſeen. The Head has firſt of all the frontal or forehead Bone, which makes the Brow, and in Colts and almoſt all other young animals, is divided by a Seam down the middle, which in time totally wears out: The two ſide Bones, called the *Parietal* or Walls, are divided by a Seam which reaches along the middle of the Head from the Forehead to the Occipital or Noll Bone: Theſe are ſmall in a Horſe in proportion to what they are in Man, becauſe the greateſt bulk of a Horſe's Head lies forward. All the Bones of the Head are join'd together by Sutures or Seams indented into each other, which is the only way by which the Bones of that Figure could be united, ſo as to anſwer all the Functions of the Head and Brain. Beſides theſe principal Bones are the temporal Bones, which are not indented as the other, but are joined to each ſide by appoſition, and are fix'd by a gummy cement to the circumambient Bones of the Head. They are thick and very hard in their middle and lower

TAB. I. *p.* 58.

Fig. I.

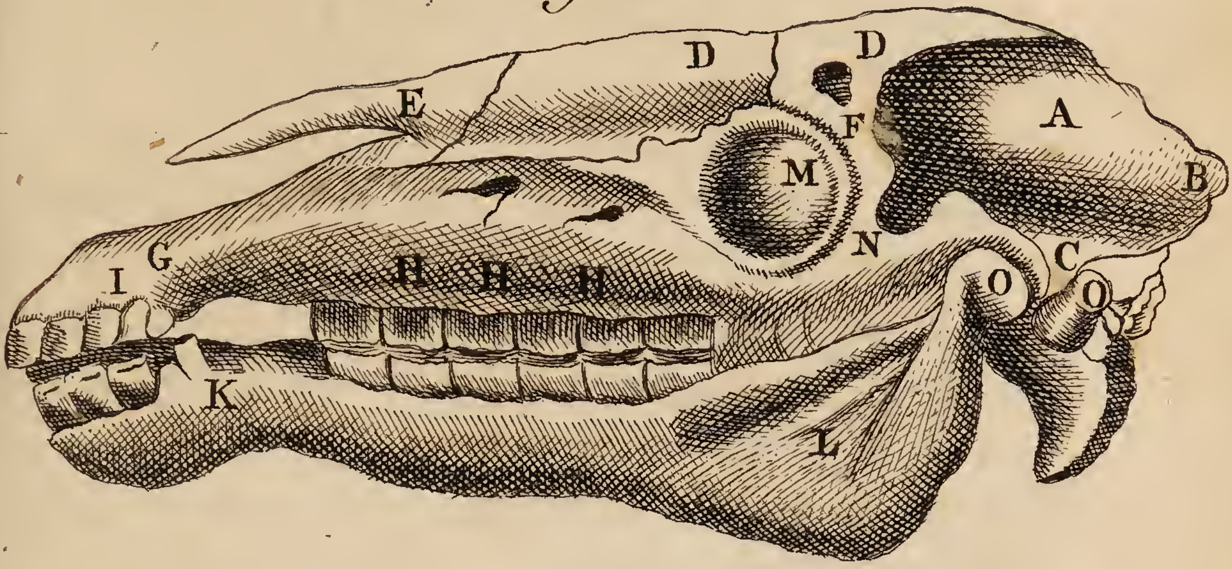
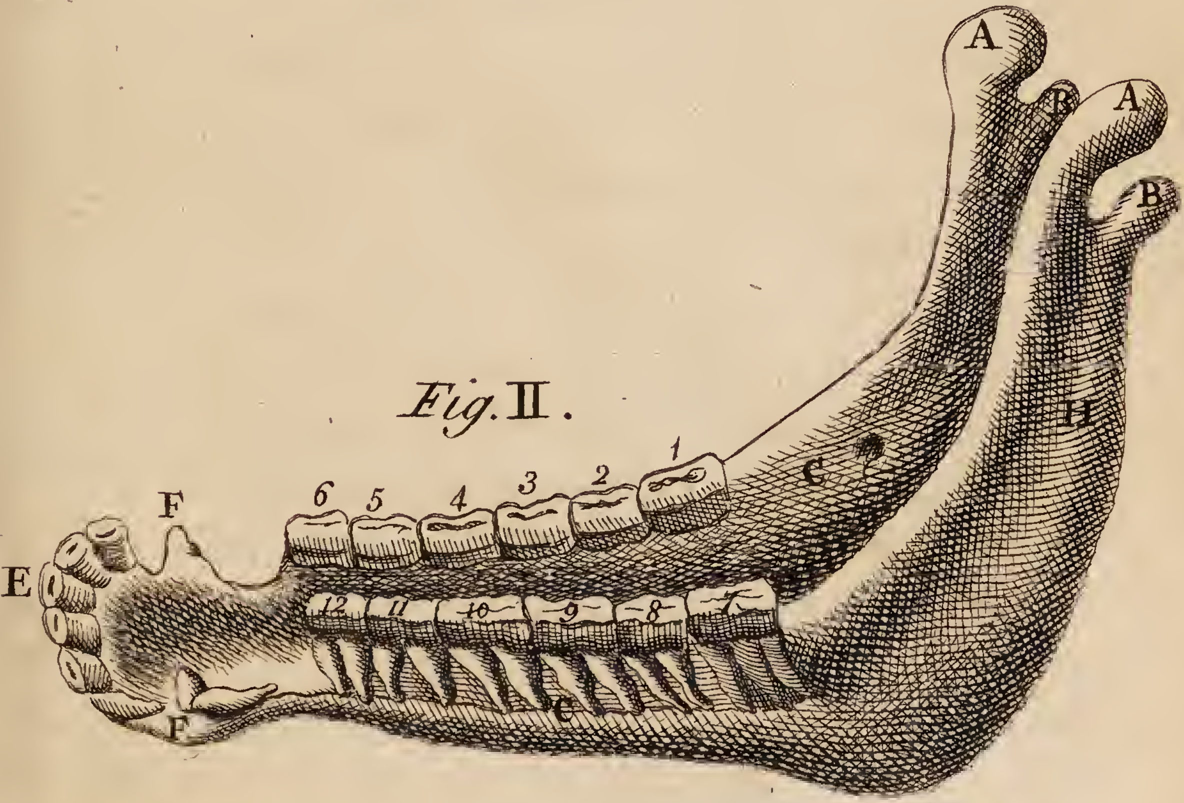


Fig. II.



er part, but grow thinner, eſpecially round their upper Edges. The Bones common to the Head and upper Jaw, are the wedge Bone, the yoke-like Bone, and the *Os Cribriforme* or ſieve-like Bone. The other eight that make up the number ſeventeen, belong to the Ear, which form the Organs of hearing, and lie within the temporal Bones, *viz.* four on each ſide.

There are are ſeveral Blood-Veſſels that have their paſſage thro' the Seams of the Skull, by which the Blood has its egreſs and regreſs from the Brain to the external parts of the Head, and from thence back to the Brain: And beſides the Veſſels that paſs thro' the Sutures, there are Holes and Perforations in divers parts of the Skull, for others that are ſpread both externally and internally upon the Head and Brain, and particularly five very diſtinct ones in the *Occiput* or Noll Bone, beſides its great perforation towards its bottom, by which the ſpinal Marrow or Pith paſſes downwards, thro' the Bones of the Back. There are alſo many Holes thro' the *Os Cribriforme*, towards the Noſe and the larger Emunctories, for the Paſſage of ſeveral Nerves and Blood-Veſſels, with others towards the Eyes and Ears.

On the inſide of the Bones of the Skull, are ſeveral Sinus's or Impreſſions and Furrows made by the larger Veſſels of the *Dura Mater*, or uppermoſt Membrane of the Brain, which Veſſels form theſe Lodgments in the Fœtus before the Skull acquires its hardneſs, by which theſe Veſſels are afterwards preſerved from external Injuries. The inſide of the Skull is alſo in many other places full of unevenneſs, made by the form of the cortical part of the Brain, whereby we may eaſily perceive that the Skull or *Cranium* is a proper Helmet or Defence for the Brain; and likewiſe that the Brain muſt have its perfect Form prior to the Skull, which at firſt is itſelf but a Membrane like a Bag, and becomes bony by degrees; for if the Bones, eſpecially thoſe of the Head, were to grow hard before the Birth, it would be difficult for any Creature to be brought forth without manifeſt danger.

It may alſo be obſerved, with reſpect to the accretion and growth of the Bones of the Skull, that they begin always to turn bony towards their middle or moſt protuberating part, and ſo dilate their hardneſs by degrees to the Edges, where they are join'd and indented into one another; which kind of Mechaniſm prevents many accidents to which all young animals are expoſed. But afterwards the Bones of a Horſe's Head grow ſo extremely hard, that no head Saw is able to part them aſunder, unleſs it be contrived much ſtronger than thoſe commonly uſed by Anatomiſts. The Meditullium, or middle ſubſtance between the two Plates of the Skull, is ſcarce to be found in adult or full-aged Horſes, but both its Tablatures ſeem to be united into one, except over the Eyes, on the lower part of the frontal Bone, or on the inſide where there are large Sinus's or Furrows; by which means a Horeſ's Head is well fenced againſt Blows and other accidents: But towards the Noſe the Bones are more ſpungy, and made up of ſeveral Cartilages which are very tender and ſenſible; and we often

TAB. II. *p. 60.*

Fig. I.

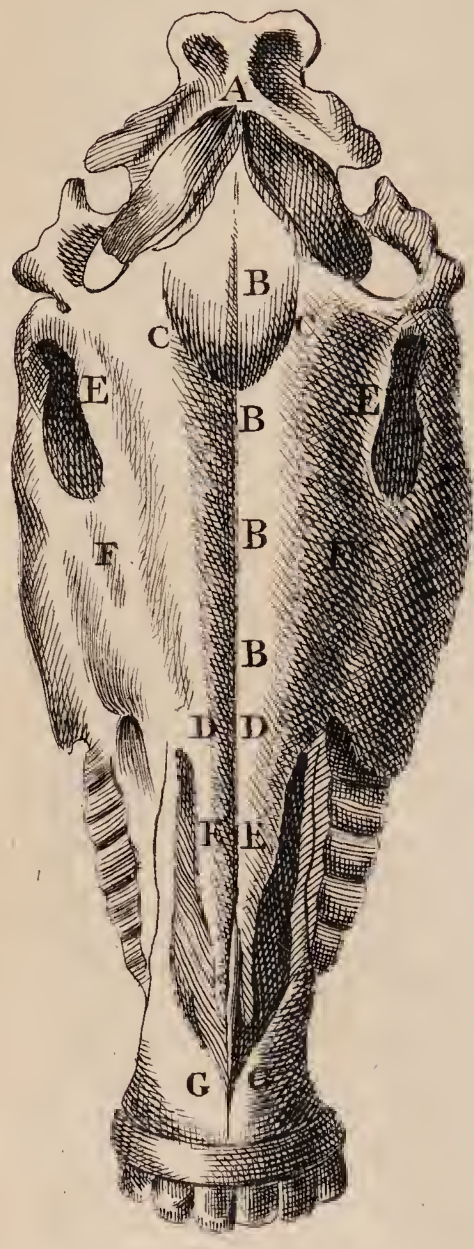
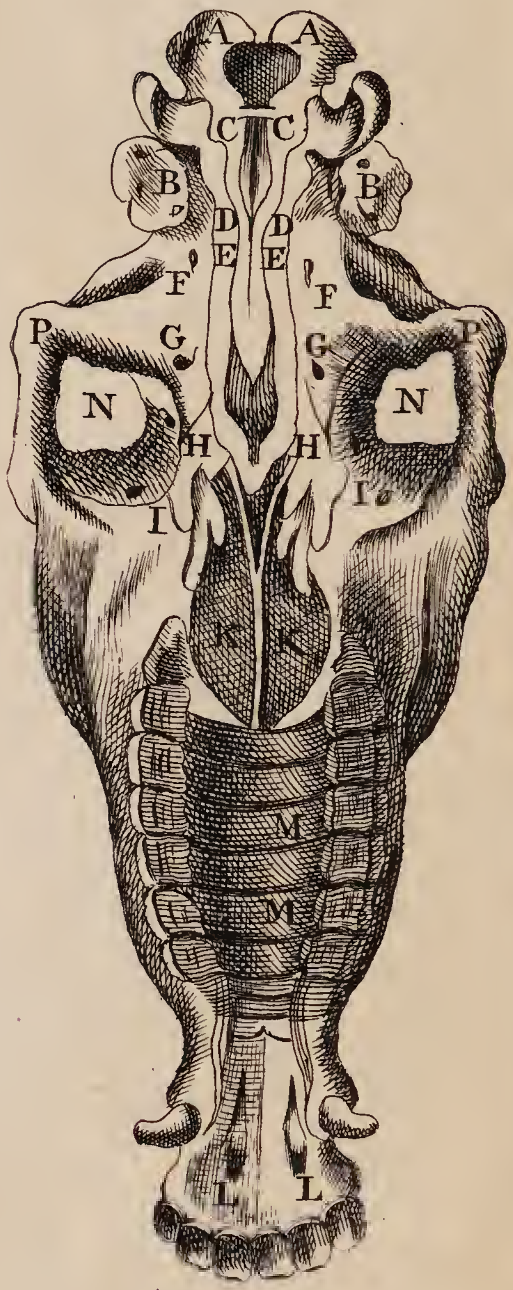


Fig. II.



often obſerve brutiſh People in their paſſion beat their Horſes over the Noſe, as the ſureſt way to gratify their revenge, when they happen to be dull or obſtinate.

The wedge-like Bone, or the *Cuniforme*, as the Anatomiſts call it, is join'd before to the frontal or forehead Bone, and behind to the lower part of the *occipital* or noll Bone, and ſo makes the bottom or baſis of the Skull, like a wedge between it and the upper Jaw. It has ſeveral Holes or Perforations which give paſſage to the Carotide Artery and Jugular Vein, the principal Blood-Veſſels belonging to the Head. The *Os Cribriforme* or ſieve-like Bone, already mentioned, gives a paſſage to ſeveral Blood-Veſſels and Nerves; ſome to the Noſe, ſome to the Eyes, and ſome to the Ears, and contribute to the Senſes of ſeeing, hearing, and ſmelling, and alſo divides the Noſtrils, and has ſeveral cavities filled with ſpongy Fleſh.

The upper Jaw-Bone is joined to theſe, and has a little Proceſs that paſſes to the lower part of the Orbit of the Eye, which forms part of that Orbit. The Cheek Bone, which is alſo part of the upper Jaw, has a very large ſinus or hollow below the Eye, on each ſide, which in a Horſe is divided by four bony Partitions that open into the Noſe; there is alſo a little Hole on each ſide, thro' each of which an excretory Duct or little Pipe paſſes, to carry off the ſuperfluous Moiſture from the Kernels or Glands on the inner corners of the Eyes, and when theſe are ſtop'd the Kernels grow ſpungy, are ſoak'd with Moiſture, and breed the Diſtemper called the Haw. On the lower part are the Alveoli or Sockets for the teeth, which, including the Tuſhes, are twenty in number, *viz.* ſix fore Teeth and twelve double Teeth, backwards called the Grinders, *viz.* ſix on each ſide.

The lower Jaw differs from the upper in that it is moveable, being joined and articulated into the Sinus's of the lower part of the temporal Bone. In young Animals it is divided between the Fore-Teeth ſo as the Bones may be eaſily parted aſunder. On its lower Edge it is round and ſmooth, and hollow within, containing ſeveral Cells filled with a medullary Subſtance or Marrow. Thro' it are ſeveral Holes, and under the Teeth Sinus's for the paſſage of Nerves and Blood-Veſſels. The middle or flat part is more ſolid, and along the inward Edge are the Alveoli or Sockets for the Teeth, which are the ſame as in the upper Jaw, *viz.* ſix forward, two Tuſhes, and ſix on each ſide backward, making in all, above and below, forty in number.

The Bone of the Tongue called the Os Hyoides, from the reſemblance it has to the Greek Letter υ *ypſilon*, has its proper Muſcles, which take their riſe, or are inſerted into it, beſides others that go to the Palate and Larynx, or Head of the Windpipe, which alſo have their Origin from this Bone.

The Vertebræ or Rack Bones.

The Vertebræ or Rack Bones come next to be deſcribed; the Neck has ſeven Vertebræ, the Back ſeventeen; the Loins have ſeven; the Croup ſix, and the Rump or Tail eighteen.

The

TAB. III. *p. 63.*

Fig. I.

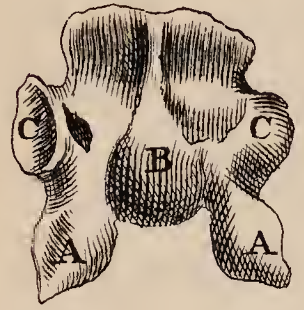


Fig. II.

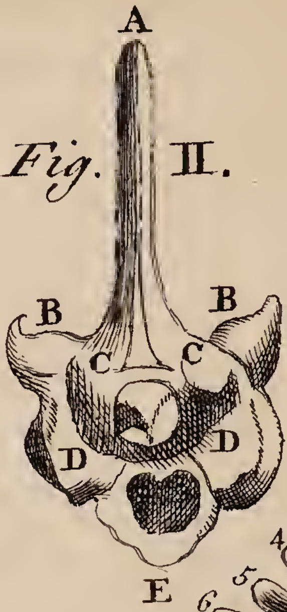


Fig. III.

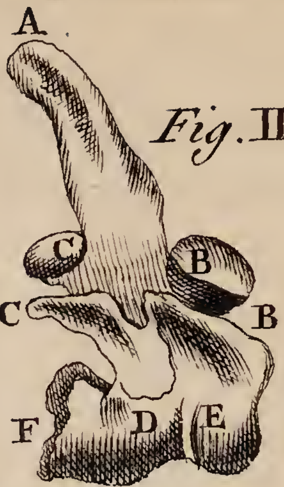


Fig. IV.

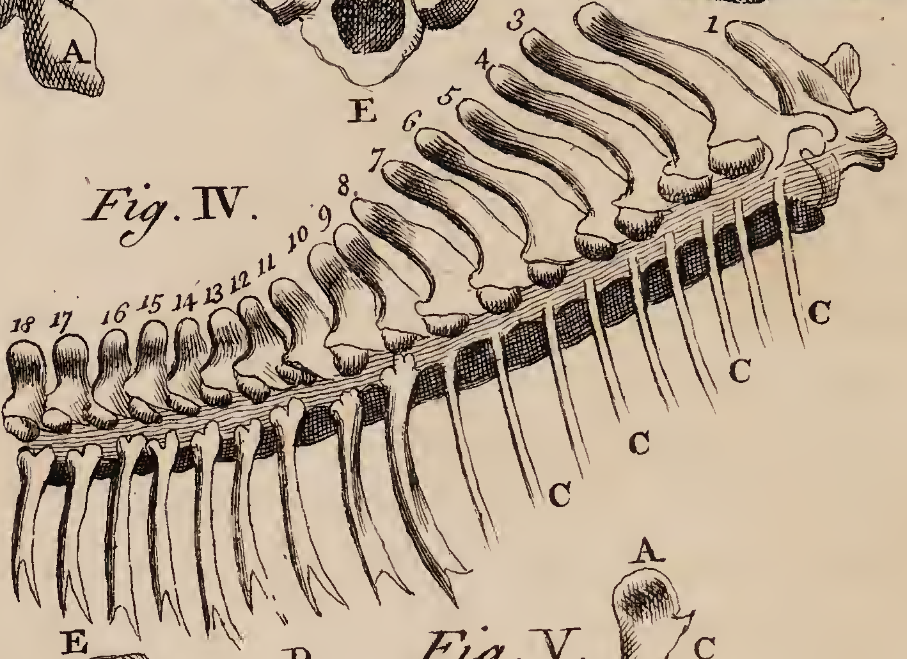


Fig. VI.

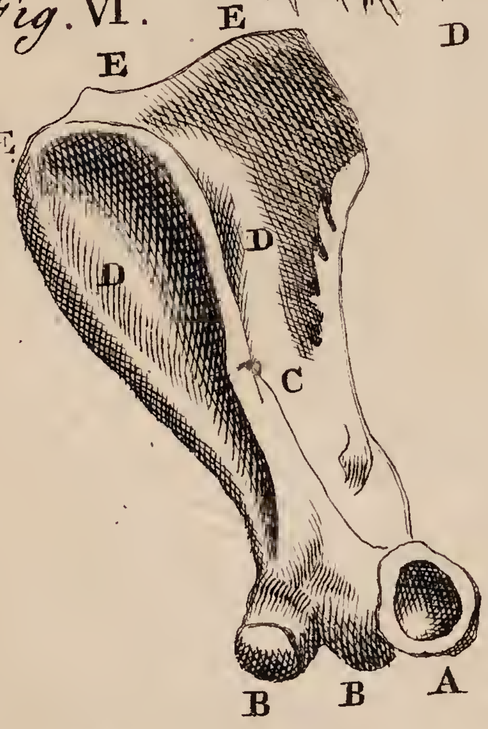
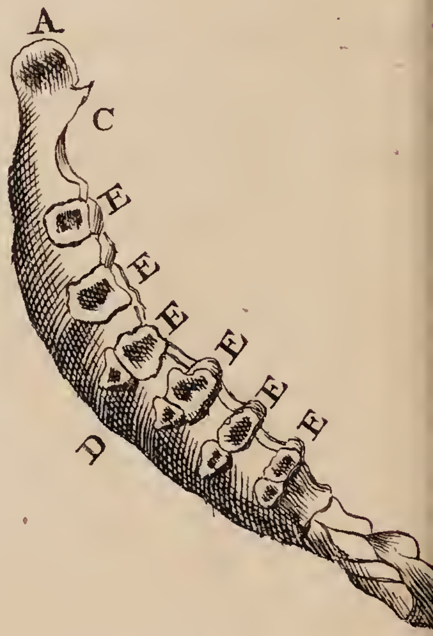


Fig. V.



The Vertebræ of the Neck, Back and Loins.

The Vertebræ of the Neck have their Spines ound and ſmooth, with a hollowneſs between hem on each ſide for the Muſcles and Ligaments, which fill up their Cavities; the uppermoſt has a Proceſs that is received by the ſecond, pon which the Head turns from ſide to ſide, ke a Door upon its Hinges, and yet is ſo fixed o the Head by Muſcles and Ligaments, that it annot go beyond its Limits. The ſeventeen Vertebræ or Joints of the Back are different rom thoſe of the Neck, having their Spines ery high, eſpecially on the Withers, which riſe rchwiſe, and are like a Paliſade or Rail. Theſe pines are pretty ſolid in the middle, and of a ontexture like the Ribs, only that their Tops re broad, oft and ſpungy, covered with a ery ſmooth ſand ſtrong Ligament, to keep them nited, and preſerve the Back from being bruiſd. Below and beyond the Withers, and along he Seat, the Spines are ſhorter and of equal eight, till they approach towards the Loins, vhere they riſe higher, eſpecially they are very onſpicuous in roch-back'd Horſes; but behind hey are more level, as they deſcend towards he Rump. Every one of theſe Bones, from he firſt Vertebræ of the Neck to the laſt of he Loins, has a large Perforation for the Pith of the Back, which deſcends from the Brain, nd paſſes downwards to the Rump, where it nds. The Bones of the Tail are eighteen in number: They have no Pith within them, as hoſe above deſcrib'd, and therefore are not perforated, but are without any Bore: They are oft and ſpungy, and more looſely joined together, with very ſoft yielding Cartilages, ſo that they may be eaſily ſeparated and curtail'd in any part without danger; they are alſo the better fitted to motion, wherein the Tail anſwers all the Motions of a Horſe. They are large towards the Rump, and ſhort, but grow gradually ſmaller and longer, till they end in a Point.

The Collar Bones.

The Collar-Bones are two in number, in the ſhape of an Italick *ſ*, *viz.* one on each ſide; by one End they are united to the uppermoſt Rack-Bones, and by the other to the upper part of the Sternon or Breaſt-Bone, by little Heads which enter into the Cavities of theſe Bones; whereas thoſe in Men are joined to the Shoulder, and aſſiſt in its Motion by a particular Mechaniſm, which I need not here deſcribe; but in a Horſe they are of uſe to ſupport the Shoulder-Blades, and keep them from ſliding forwards.

The Ribs.

The Ribs, in all thirty-four in number, are diſtinguiſhed by the true and falſe. The true are the uppermoſt nine on each ſide, which are alſo joined to the Rack-Bones of the Back, and to the Breaſt-Bone incompaſſing the whole upper Cavity. The Breaſt-Bone in a Horſe, and many other Quadrupeds, is ſhap'd ſomewhat like the Bottom of a Ship. It is at firſt ſpungy, but in time grows pretty hard, and has along its two Sides cartilaginous Dents or Impreſſions, where it receives the Ends of the true Ribs. The Part which reaches towards the Pit of the Stomach, is called the *Cartilago Enſiformis*, or Sword-like Cartilage, having a point reſembling that of a ſword. The falſe Ribs are in number eight on each ſide: They are not ſo ſtrong and rigid as the true Ribs, and grow ſhorter as they approach towards the Loins, leaving an opening for the Stomach and Belly. The Shape of a Horſe's Belly depends much upon the length or ſhortneſs of theſe Ribs; for the larger they are in compaſs, a Horſe looks the more round, and when they are very ſhort, ſuch Horſes can never carry a good Belly. All the Ribs are thick and ſtrong towards the Back, but towards the Briſket and Belly they are thin and flat; whereby they are endowed with a kind of ſpring, which enables them to dilate and contract in reſpiration, and when they are well-proportion'd, add conſiderably to the goodneſs of a Horſe's Wind. All the Ribs on their inſide are exquiſitely ſmooth, and covered with a membrane reſembling the fineſt ſatin, that the Heart, Lungs, and other Viſcera, may not be hurt by their hardneſs.

The Shoulder-Blade.

The Shoulder Blade-Bone lies like a ſhield from below the Withers, to the point of the *Os Humeri* or Shoulder-Bone, which Bone turns backwards to the Elbow, forming an angle. The Blade has a high Spine or Ridge along its middle on the outſide, and is joined to the Ribs by its Muſcles, which have very ſtrong Tendons. The lower end has a ſlender Cavity which receives the round head of the Shoulder-Bone, and becauſe of its ſhallowneſs is invironed with a very tough cartilaginous ſubſtance, and covered over with a broad and very

TAB. V. *p.* 67.

Fig. I.

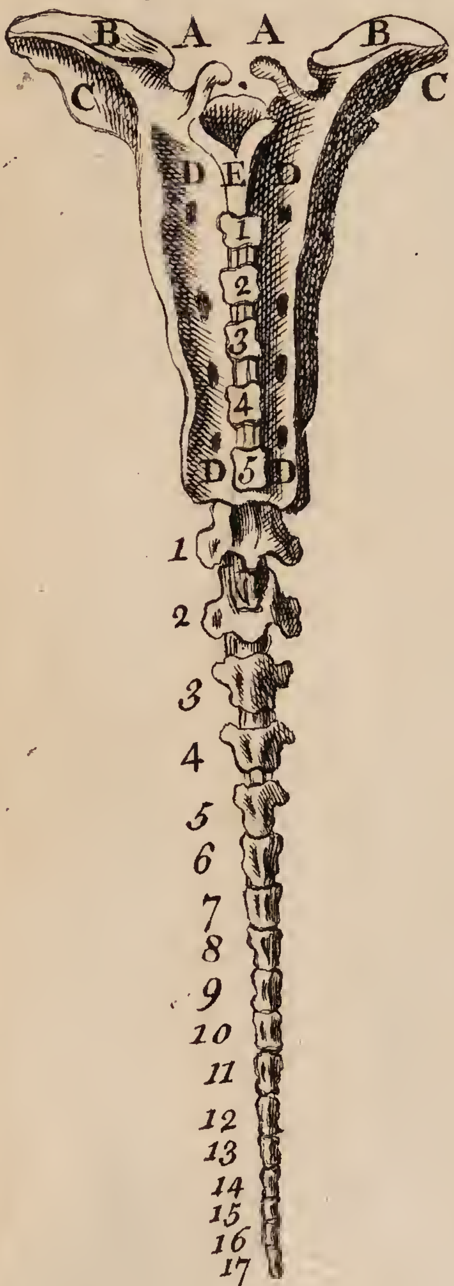


Fig. I.

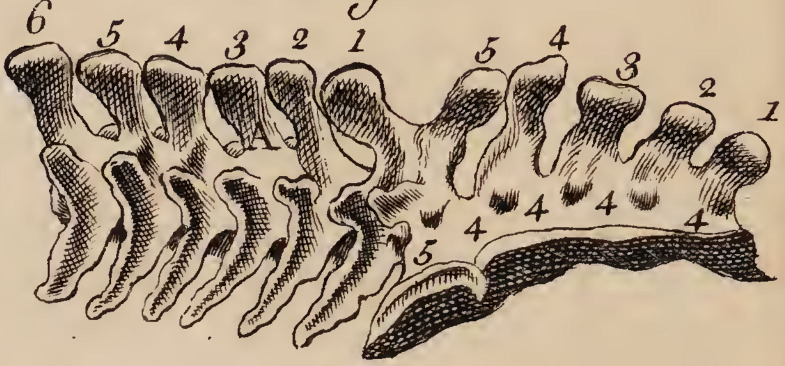
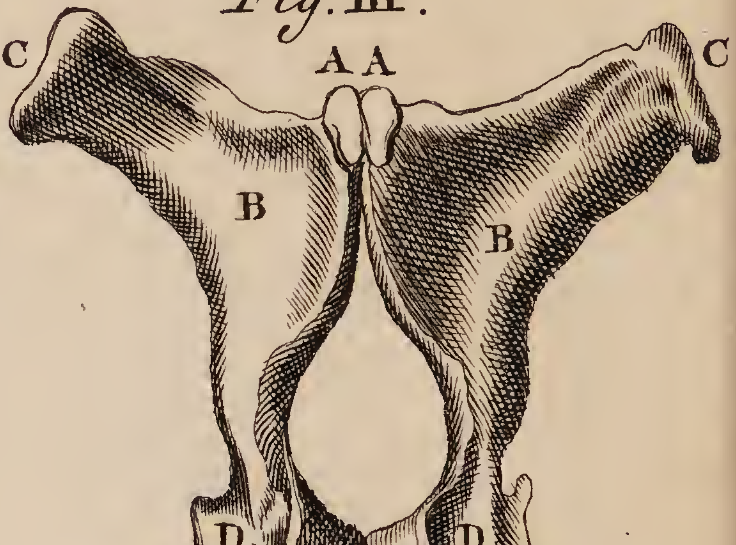


Fig. III.



and two Cavities, which receive two Proceſſes of the ſame Bone, and has two ſmall triangular Bones faſtened to its back part, which form the Fetlock, and are alſo like a Stay to preſerve the Joint from falſe Motions, which would very much ſtrain the Ligaments. The little Paſtern is joined to the great Paſtern in ſo curious a manner, that to the Eye both ſeem to be but one. By this Juncture the Paſterns yield and give way, when a Horſe is preſſed with a great weight upon his Back, which otherwiſe by their poſition would be apt to break. The lower end of the leſſer Paſtern is articulated, and joined to the Coffin-Bone by two Heads, and to the upper or greater Paſtern in the ſame manner as it is received into the Coffin-Bone.

The Coffin-Bone is that which lies within the Hoof as in a Coffin; it is round upwards where it receives the little Paſtern, but grows broader and thinner towards its Bottom; it is of a porous open contexture, like a piece of Loaf-Sugar, and is eaſily pierced, and often wounded when Horſes happen to take up nails or other ſharp things in the ſtreets, to which accidents they are often liable, and are more eaſily cur'd than if that Bone was hard and ſolid.

Bones of the hind Parts.

The Bones of the hind Parts of a Horſe, are the *Oſſa Innominata*, divided into the Hip, Haunch, and Share-Bones. The firſt is the *Os Ilium*, ſo called from the Gut Ilium that lies under it. The ſecond is the *Pubis*, which makes a ſmall arch at the extremity of the lower Belly, thro' which the Yard paſſes, at the entrance of which is the Neck of the Bladder. The third is called the *Iſchium* or Coxendix, and has on each ſide a large round Cavity, which receive the round Heads of the Thigh-Bones. Theſe Bones are joined on their Back, or upper part of the *Os Sacrum*, by Cartilages, or Griſtles, which in time grow ſo hard, that they can ſcarce be ſeparated. The Os Sacrum is the Bone that lies under the Crupper next the Rump, which with the Oſſa Innominata, form the Pelvis or Baſon. It is alſo joined to the loweſt Rack Bone of the Loins, and with the uppermoſt Bone of the Rump.

The Thigh-Bone reaches from the Hip to the Stiffle. Its upper Head is round and ſomewhat longiſh, that it may the better fill up the Acetabulum, or Cup of the Hip-Bone, and as it turns backwards and forwards within this Cup or Cavity, upon the alternate motions of a Horſe's Leg, it is therefore in common phraſe called the Whirl-Bone. The lower end of this Bone has two Proceſſes like a Pully, between which is a large ſpace that receives the Protuberance of the Leg-Bone, which is the Bone that reaches from the Stiffle to the Hock; there is a middle ſpace pretty large and deep between theſe two Bones, where they join, that receives the under ſide of the Stiffle Bone, which is the Knee-Pan of a Horſe.

The Whirl-Bone.

The Stiffle.

The Stiffle-Bone or Knee-Pan, is prominent on the outſide, with ſome Aſperities for the inſertion of the Muſcles of the Thigh, and on its inſide curv'd and ſmooth, exactly anſwering to fill up the Space between the two Bones above deſcribed.

TAB. VI. *p. 68.*

Fig. I.

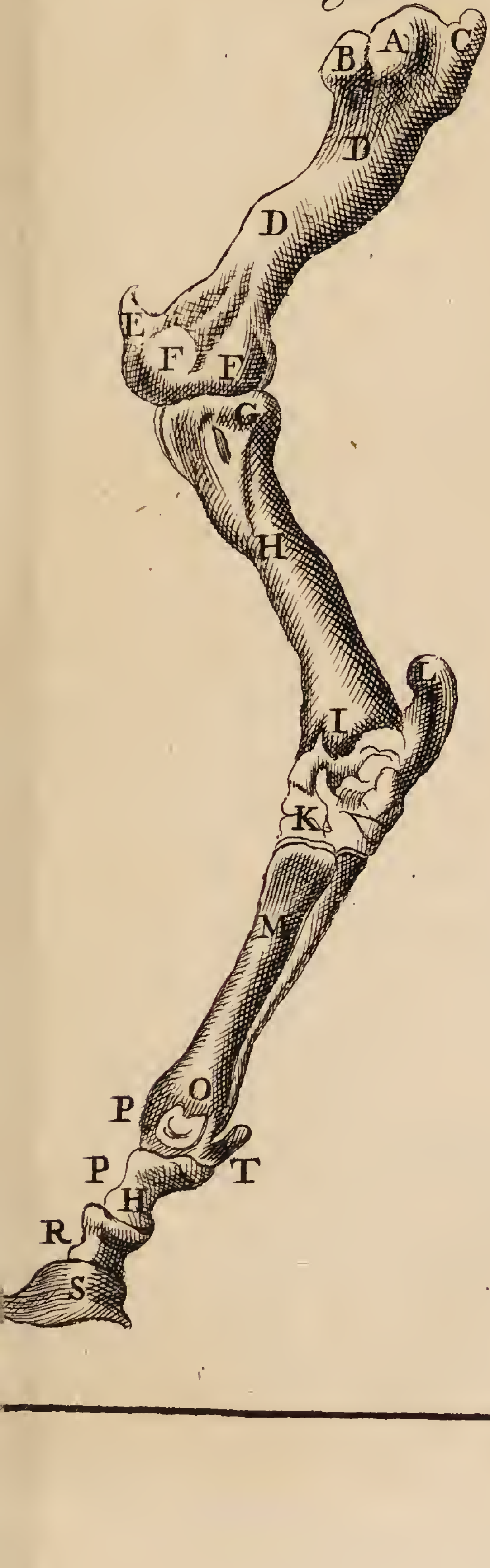


Fig. II.

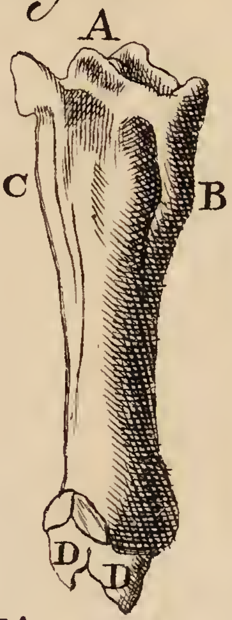


Fig. III.

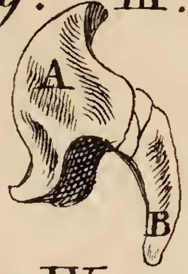


Fig. IV.

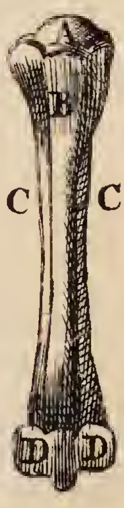


Fig. V.

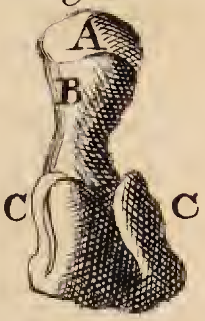


Fig. VI.

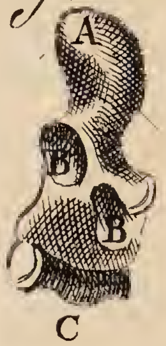
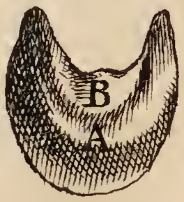


Fig. VII.



deſcribed. It is kept in its place by a ſtrong Ligament, that riſes from the upper end of the Bone of the Leg, and is inſerted into its lower end below its middle, and by the Tendons of the Muſcles of the Thigh, which are inſerted into its upper end, and by a broad, ſtrong ligamentous Subſtance, which is expanded all over it, ſo that it cannot be eaſily diſlocated with the moſt violent Force, neither can it be ſo readily fractured as a Man's Knee-Pan, becauſe of its convexity. It is very ſtrong and ſolid, like a piece of flint, has no cavity within it, and but very little porous, which renders it the more fit for all the motions of the Leg.

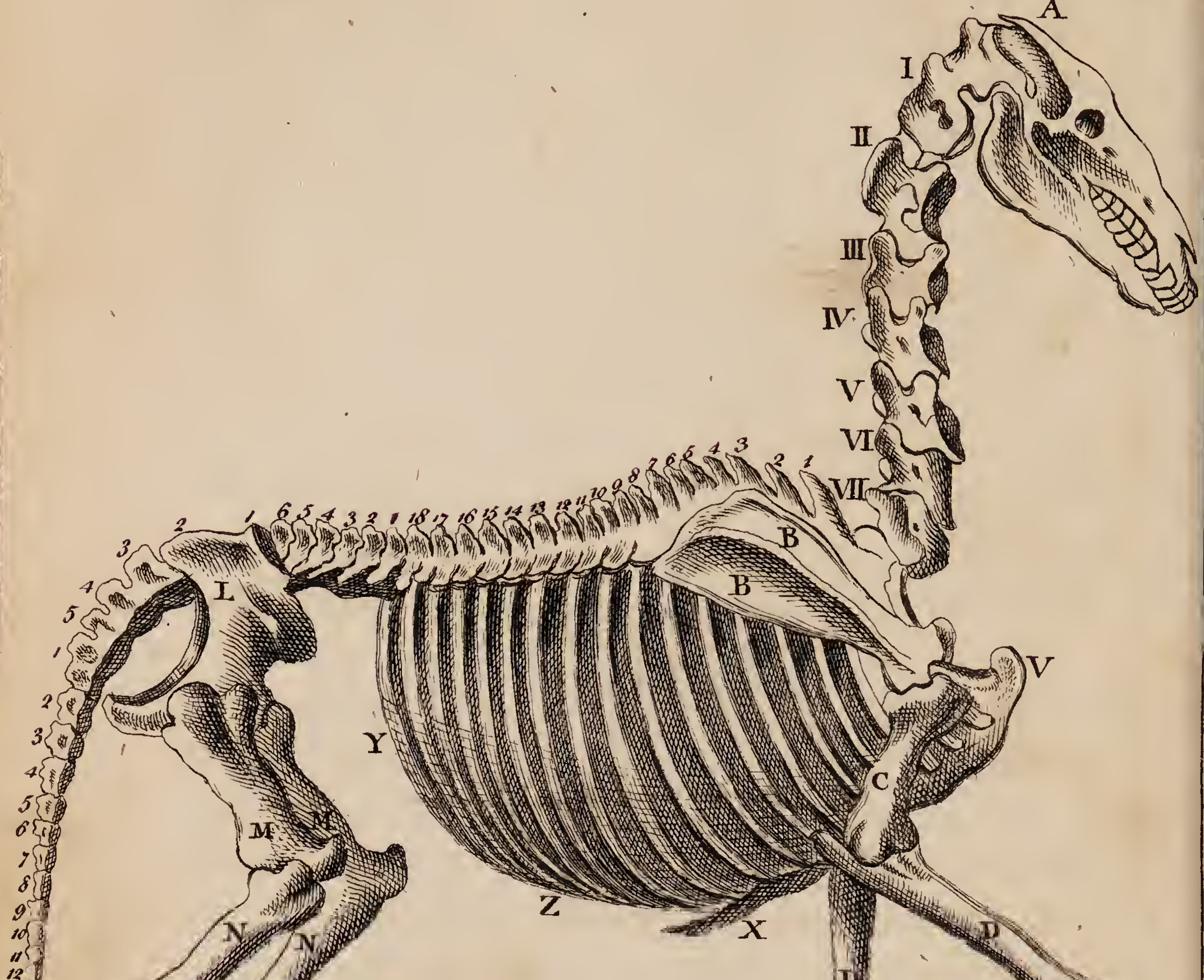
The ſmall Bones of the Hock, are in number the ſame with thoſe of the Knee, *viz.* three in the firſt Range, and four in the ſecond; they are alſo articulated with the Inſtep, as thoſe in the Knee are with the Shank: They are extremely ſmooth, ſo as to facilitate the motion of the Joint, and preſerve a Horſe's Legs from doubling under him when he is put upon his Haunches, and give a kind of ſpring in vaulting, leaping, or any other forcible action of the hind Legs.

The Inſtep is made of three Bones, which are ſo cloſely united, that they ſeem to be but one, and cannot be eaſily ſeparated, much in the ſame manner as the Shank-Bone already deſcribed. The Paſterns and Coffin-Bone, agree alſo in every reſpect with thoſe of the fore Feet.

The Hoofs are a bundle of Huſks, which cover the Papillæ pyramidales of the Skin, on the extremities of the Feet, which dry, harden, and lie cloſe one upon another. They are without Senſe, that they may endure travelling among Stones, and in rough Ways, and like the Nails of Men, are continually growing, by which means they may be pair'd or cut, as often as they require it. They adhere pretty cloſe to the Foot, and are faſtened to the Coffin-Bone by a Ligament that proeeeds from their Root, and ſurrounds it below the Coronet like a piece of tape, which alſo unites it to the Coronet. Underneath the Hoofs are many Twigs of Nerves, Tendons, and Muſcles, which take their courſe to the bottom of the Foot, and make that fleſhy ſubſtance that lies between the Sole and the Coffin-Bone.

I ſhall conclude this ſhort Diſcourſe of the Bones with obſerving, that all the long Bones, ſuch as the Shoulder and Thigh-Bones, the Bones of the Leg, of the Shank and Inſtep, are hollow along their middle, and contain a medullary ſubſtance or marrow, which ſerves inſtead of oil, to keep them from growing too hard and brittle. Towards their extremities, that is at both ends, they are not perforated, but their ſubſtance is porous, and their interſtices, when cut, are bloody, eſpecially in young animals, wnich is a great means to prevent their being broke very near the joints, which would almoſt always intail incurable lameneſs. Over each end they have an Epipheſis, or cap, covered with a Cartilage or Griſtle, to make their action glib and eaſy, and are inſenſible, that their motions may induce no pain. The

TAB.VII. *p. 71.*



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larger joints, ſuch as the Shoulder, the Hip, and the Stiffle, have not only very ſtrong ligaments, of various contrivance, to keep them in their place, as has been obſerved, but have Glands or Kernels that ſeparate an oily matter, which continually preſerves them moiſt, otherwiſe they would ſoon grow dry and wear with their frequent friction one upon another. All the Bones have holes or perforations more or leſs, for the paſſage of Nerves and Blood-veſſels; and in ſeveral places beſides their common Proceſſes and Protuberances, little aſperities and roughneſſes, for the origin and inſertion of Muſcles, which are ſo ſituated, as not only to add the greateſt beauty, but are the moſt ſubſervient to their various motions, and all their other appointments.

Where no motion, or but little motion, is intended, the Junctures are more compact, as in the Bones of the Head, the Rack-Bones of the Back and Loins, the Os Sacrum, and Bones of the Hips; and yet all theſe Junctures are uſeful and neceſſary, and contrived with great wiſdom; for by the Seams or Sutures of the Head, no fiſſure or cleft can run quite acroſs, but muſt terminate at one of theſe. The Vertebræ, or Joints of the Neck, having no ſharp Spines, but being ſomewhat in reſemblance of a Chain, are altogether fitted to give a beautiful turn to the Neck, and to all the neceſſary motions of the Head. The Vertebræ, or Rack-Bones of the Back, are alſo ſo joined with yielding Cartilages, as endues them with ſuch a property as we obſerve in green ſaplings, which enables them to correſpond with all the other animal motions, and at the ſame time, are ſo confined by their Spines and Proceſſes, and by antagoniſt Muſcles, that they cannot be diſtorted beyond their proper limits, without great violence; and yet if theſe were altogether without motion, the whole body muſt alſo, in a great meaſure, be immoveable. On the contrary, the Bones of the Hips, with the Os Sacrum, are joined in ſo compact a manner, as ſhews them to have no very great capacity of motion in themſelves, but are ſo placed as to give the greater certainty to the motions of the Hind-legs; and the compactneſs of the Rack-bones between the Shoulders and the height of their Spines, has the ſame effect on the Fore-legs; ſo that there is nothing wanting in the mechaniſm of the Bones to render all the actions of a Horſe compleat and perfect.

CHAP. II.

Of the MUSCLES.

THE Muſcles are the inſtruments of motion, and it is by them that all the motions of every animal body are performed. They are of ſeveral kinds; ſome are long and round, as moſt of thoſe that move the Limbs, and are broader and flatter at their origins than their inſertions, where they run out in ſhape of a ſmall cord, and form thoſe ſtrong Sinews that are inſerted into the Hocks and Paſterns. They are made up of ſeveral bundles of fibres or threads, and all the Muſcles of this kind are rectilineal, having their fleſhy fibres on their outſide gradually ſhorter than thoſe in the middle, which not only makes them ſtronger at their inſertions, but this contrivance prevents the Limbs being fleſhy, which, by any other mechaniſm, would happen upon every change or alteration in the Blood, and would very much weaken and debilitate thoſe parts, as we ſee in many inſtances, where the Muſcles of the lower Limbs happen to be fleſhy near their inſertions.

Many of the other Muſcles are more or leſs flat in their middle, and their origins and inſertions are alſo flattiſh. Some of theſe are long and narrow, as the ſtraight Muſcles of the Belly, which, becauſe of their thinneſs and their great length, are tendinous in ſeveral parts acroſs their middle; others are tendinous lengthways, and their Fibres run off on each ſide like a feather, and are therefore called penniform Muſcles. Some have both their directions oblique, as the oblique aſcending and deſcending Muſcles of the Lower Belly. They are alſo of different ſhapes, according to their different uſes, and the parts where they are ſituated, ſome being triangular, ſome pyramidal, ſome indented or toothed like a ſaw, and ſome are round and angular like a ring, as the Sphincter Muſcles that open and ſhut the Fundament and Neck of the Bladder; the laſt of which is more diſtinct in Horſes, and ſome other large animals, than in the human body.

Now, as to the particular ſtructure and mechaniſm of the Muſcles, it may be obſerved, that they are all exactly ſuited to the parts they are to move. Where the motions are not ſtrong, but quick, the Muſcles are ſlender, or ſhort, and ſometimes both. Where the motions are ſtrong, the Muſcles are not only ſtrong likewiſe, but are ſometimes of great length; being derived from parts at a diſtance from their inſertions, as ſome of the Muſcles of the Shoulder, Neck, and Limbs; and where they are to ſupport or move any great weight by a ſlower motion, their Tendons and ſinewy Parts are extremely ſtrong and firm, and are made up of the Tendons of ſeveral Muſcles united together in one; as ſome of thoſe belonging to the Legs, Paſterns, and Hocks, which are actuated by the force of ſeveral Muſcles joined together towards their inſertions. In parts where there is the greateſt variety of motions, the Muſcles are the moſt numerous; and where the motions are few, the Muſcles are alſo few in number.

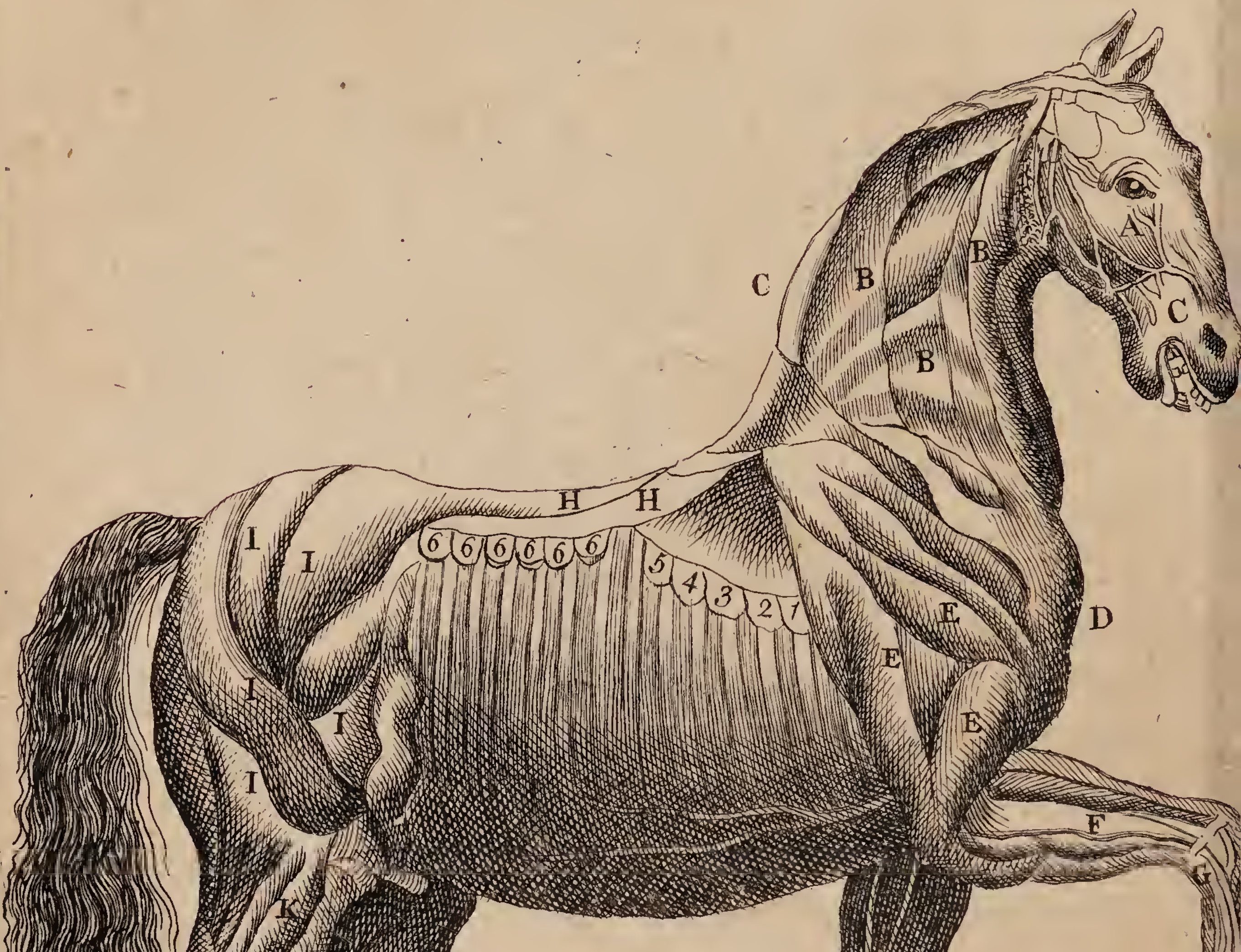
Having premiſed theſe things in general concerning the Muſcles, I ſhall now proceed ſo far into particulars, that thoſe who peruſe the enſuing part of this Treatiſe, may have the better notion of thoſe Diſtempers, where the Muſcles are principally affected.

The Muſcles of the Head and Neck, and their ſeveral motions.

There are a great number of motions peculiar to the parts belonging to the Head and Neck, which are therefore ſupplied with abundance of Muſcles. The Eyelids have no leſs than three pair of Muſcles, and the Eyes ſeven. One pair of the Muſcles of the Eyelids opens, and two

Of the Eye-lids.

TAB. VIII . *p.* 74.



two ſhut them. The one that opens is peculiar to the Eyelid only; whereas the other two are inſerted into both, to bring them together, and to ſhut the Eye; and all of them riſe from the edge of the hole in the bottom of the Orbit, through which the optick Nerve paſſes to the Eye. The Muſcles of the Forehead alſo act by conſent, in opening and ſhutting the Eyelids; and their Action is moſt perceivable, when a Horſe, or any other creature, is brought out of a dark place into a ſtrong light. But the Eye having a variety of motions, its Muſcles are more numerous, to move it upwards, downwards, and ſideways, and to roll it about. Horſes, and almoſt all Quadrupeds, have one peculiar to them, which is not to be found in men; and is therefore called *Septimus Brutorum*. It is ſhort and fleſhy, inſerted into the hinder part of the Cornea, and not only aſſiſts in the tonic motion of the Eye, when all the Muſcles of the Eye act in concert together; but it is neceſſary to keep the Eye ſuſpended in creatures that feed with their Heads downwards, leſt, by their continual aud ſtedfaſt looking towards the ground, the other Muſcles ſhould be weakned; and the Eyes, by that means, project too far outwards, which would be apt to impair the ſight, if not to intail blindneſs.

Of the Eye.

The Noſe has four pair of Muſcles, that widen and contract the Noſtrils, which ariſe from the upper Jaw, and from under the Eyes, and are all of them inſerted into the Griſtles of the Noſtrils, and part of the upper Lip. The action of the Muſcles of the Noſe is moſt perceivable,

The Muſcles of the Noſe.

perceivable, when Horſes are extremely heated with Exerciſe, in broken-winded Horſes, and in all kinds of Fevers, where the Noſtrils open and ſhut more or leſs, in proportion as a Horſe happens to be more or leſs oppreſſed with his diſtemper; and as ſome of the Muſcles of the Lips act alſo in concert with thoſe of the Noſe, therefore, in very extreme caſes, the upper Lip is alſo drawn upward in all the workings of the Noſtrils.

Of the Lips.

The Lips have five pair that are proper, and two common to the Mouth and Cheeks; ſome of which compoſe the fleſhy part of the Cheeks. The chief uſe of theſe Muſcles is to enable a Horſe to gather in his Provender; and one pair, particularly, draw the upper Lip directly upwards; which action is plainly viſible, when a Horſe ſmells at dung, piſs, or any thing that has a pungent ſcent. There is another remarkable Muſcle belonging to the Lips, which aſſiſts in all the motions of the Jaw; and as it requires more force in its action, ſo it takes its origin partly from one of the Vertebræ of the Neck, and partly from the Shoulder-blade, Breaſt-bone, and Collar-bone, and is inſerted into the Chin, Lips, and lower part of the Noſe. The reſt, by which all the peculiar motions of the Lips are performed, ariſe only from ſeveral parts of the upper and lower Jaw, and are inſerted into the orbicular Muſcle, which, like a Sphincter, ſurrounds the Lips at their Extremity.

Of the Jaws.

The upper Jaw being of itſelf incapable of motion, therefore all the Muſcles that ſerve to open and ſhut the Mouth, belong properly to the lower Jaw: the chief of which are the Temporal Muſcles, which make up the fleſhy part of the Temples, and the Muſcle already mentioned, that riſes from the Neck, Shoulders and Breaſt; which being inſerted into the Chin and upper Lip, has a conſiderable ſhare in pulling down the Jaw, ſo as to open the Mouth, as the Temporal Muſcles have the chief ſhare in pulling it up, and ſhutting the Mouth. There are others that move the Jaws ſeveral ways in chewing, and are therefore called the Maſſeters; beſides theſe, one Pair thruſt the Jaw forwards, and another pull it backwards.

Of the Tongue.

The Tongue is itſelf a muſcular ſubſtance, made up of Fibres variouſly combined together, and in ſuch a manner as may beſt ſuit and correſpond with all its different motions. The Tongue has five pair of Muſcles that are proper to it alone, and two pair that are common to it, and the Bone called the Os Hyoides, which I ſhall not here particularly deſcribe; becauſe Wounds, Cankers, or other accidents in the Tongues of Horſe, are for the moſt part eaſily cured, when proper applications are made uſe of: I ſhall therefore only take notice, that ſome of theſe Muſcles riſe from the lower Jaw, or the above-mentioned Bone; and ſome that riſe from this Bone, have their inſertions into the apertures of the lower Jaw-bone. One pair, that pull the Tongue backwards, ariſe from the Temporal Bones, and are inſerted into the Sides of the Tongue; and another pair from the lower Jaw, near the furthermoſt grinding Teeth, and are inſerted into the Ligament or Bridle of the Tongue; by which means they are ſuited to all its various motions. The Muſcles common to the Tongue and Os Hyoides, act chiefly in concert with the others, and give the Tongue ſuch motions as forward the aliment into the Gullet, when it is ſufficiently chewed, and prepared to paſs into the Stomach.

The Larynx. The Larynx, or head of the Windpipe, has ſix pair of Muſcles, that help to open and ſhut its Valves, as the air paſſes and repaſſes from the Lungs, beſides one ſingle Muſcle which defends the entrance of the Windpipe from duſt, or any other hurtful matter entering into it, by drawing both ſides of the ewer-like Griſtle together. The Epiglottis, which principally opens and ſhuts the Windpipe, being itſelf like a Spring, has therefore its Muſcles exceeding ſmall, except in ſuch animals as chew the cud. Theſe Muſcles are all more leſs liable to be affected with violent Colds, that inflame the Lungs, and cauſe that ſoreneſs of the Throat that is obſervable in ſome Horſes, that hinders them from drinking, and ſwallowing down their food.

The Pharynx. The Pharynx, or head of the Gullet, has alſo its Muſcles, which are often affected in Colds. Their office is chiefly to widen and contract the upper Orifice of the Gullet. Another Muſcle ſerves inſtead of a Sphincter, to purſe it up after feeding.

The Muſcles of the Ears. The Muſcles of the Ears in Horſes are very diſtinct and perfect, and may be eaſily traced from their origins to their inſertions; but in Men they are very ſmall, becauſe the Ears of Men have but little capacity of motion; whereas Brute Creatures, being without hands, make uſe of their Ears to drive away flies, and other things that would be offenſive to them. The motion of the Ears is alſo neceſſary to Brute Creatures, for the reception of Sounds, eſpecially to Horſes that are to be directed by the voice of their Riders or Keepers, and to avoid dangers; and therefore we may always perceive ſomewhat of the intentions of a Horſe by the motion of his Ears. When a Horſe ſees any remarkable object before him, he pricks up his Ears, and points them forwards, with an intention to hear, eſpecially when the object is attended with any noiſe; and when the noiſe or ſound comes on one ſide, he turns his Ears that way, to take the ſound; and when the noiſe is behind him he lays his Ears backwards; which is moſt obſervable in hot or fearful Horſes; for ſome ſteddy old Horſes, and thoſe of the greateſt courage, take but little notice of any object that they ſee, or any noſe they hear, unleſs it come ſo near as to give them ſome diſturbance..

The Ear is properly diſtinguiſhed by the outward and inward. The outward Ear has four Muſcles. The firſt lifts the Ear up, and points it forwards. The ſecond pulls the Ear backwards. The third draws the Ear forward, and points it downward; and theſe act together, and move both Ears, when a Horſe looks ſtedfaſtly to any thing that lies on the ground.

The fourth aſſiſts the ſecond, and pulls the Ear backward and downward towards the Neck.

When a Horſe is wanting in a quick and ſprightly motion of his Ears, it is in a great meaſure owing to the weakneſs of theſe Muſcles; for this defect is always more or leſs manifeſt in thoſe that have their Ears uncommonly large and thick, where perhaps the Muſcles are not ſufficiently proportioned to the weight they are to move; and theſe Horſes are commonly the moſt dull and ſluggiſh.

As to the internal Ear, it has two Muſcles that move the Drum and Hammer, which are the chief Organs of Hearing, the Sounds being collected in the external Ear, and conveyed from thence into the internal. The firſt of theſe Muſcles move the Drum upwards. The other riſes from the Wedge-bone, and has two ſmall Tendons, one of which is inſerted into the upper Proceſs of the Hammer, and the other into the Neck of it. This draws the Hammer obliquely forward and inward; but when a Horſe or other Animal, liſtens attentively to any approaching noiſe, then both theſe Muſcles act together, and draw the Drum or Tympanum, and all the little Bones of the Ear, alternately upwards and downwards, by which Sounds are diſtinctly and perfectly heard.

We ſhall now go on to the Muſcles of the Head and Neck, which, in regard of the Parts they have to move, are much ſtronger and larger than thoſe already deſcribed, and moſt of them have their Origins placed at much greater diſtances from their Inſertions; and by theſe all the motions of the Head and Neck are performed, *viz.* forwards, backwards, ſideways, and ſomewhat circular. And to this end, there are four pair of Muſcles common to the Head and Neck, and eight pair proper to the Head only. The proper Muſcles have ſome of their Origins from the Breaſt-bone, Collar-bone, and the Vertebræ, or Rack-bones of the Neck and Cheſt, and are inſerted ſome into the Occiput, or Noll-bone, and ſome into the Proceſſes of the two Temporal Bones. Thoſe of the Neck that act in concert with the Muſcles of the Head alſo take their Origins from the Breaſt-bone, the Spines of the Vertebræ of the Cheſt and Rack-bones of the Back; and are moſt of them, by proper gradations, ſome higher, and ſome lower, inſerted into the tranſverſe Proceſſes of the Bones of the Neck, and with ſome muſcular Expanſions between their Proceſſes, make up the Bulk of the Fleſh that is on thoſe Parts. Theſe are called the *Interſpinales*, and are peculiar to the Neck, as they aſſiſt in all its vertebral motions.

From this extraordinary Mechaniſm of the Muſcles of the Head and Neck, and particularly by their remote Origins of the Collar-bone, Breaſt and Rack-bones of the Back, it appears how much they are ſuited to the ſeveral Articulations of the Joints, ſo as to ſecure them from harm in all their various turnings; otherwiſe, in parts that abound with ſuch numbers of Articulations, though they are well connected and tied together by ſtrong Ligaments, yet a Horſe might eaſily be injured by every quick motion, and by very ſlight accidents; and the conſequences would often be bad and hazardous, as we ſee in the Poll-Evil, and other fiſtulous Ulcers that happen about the Withers, which no doubt would be very frequent, if thoſe parts had not been thus ſecured; ſo that they ſeldom happen, without ſome violent accident or natural defect, or when they are the Criſis of ſome Diſeaſe, which I have often obſerved to be the Cauſe of thoſe Maladies.

The Muſcles of the Trunk.

The Muſcles of the Trunk, which include all thoſe belonging to reſpiration, and other important uſes, may be divided into thoſe of the Breaſt and thoſe of the Lower Belly, with the Muſcles of the Back and Loins; moſt of which are alſo endowed with a very great force.

The Muſcles of the Back and Loins.

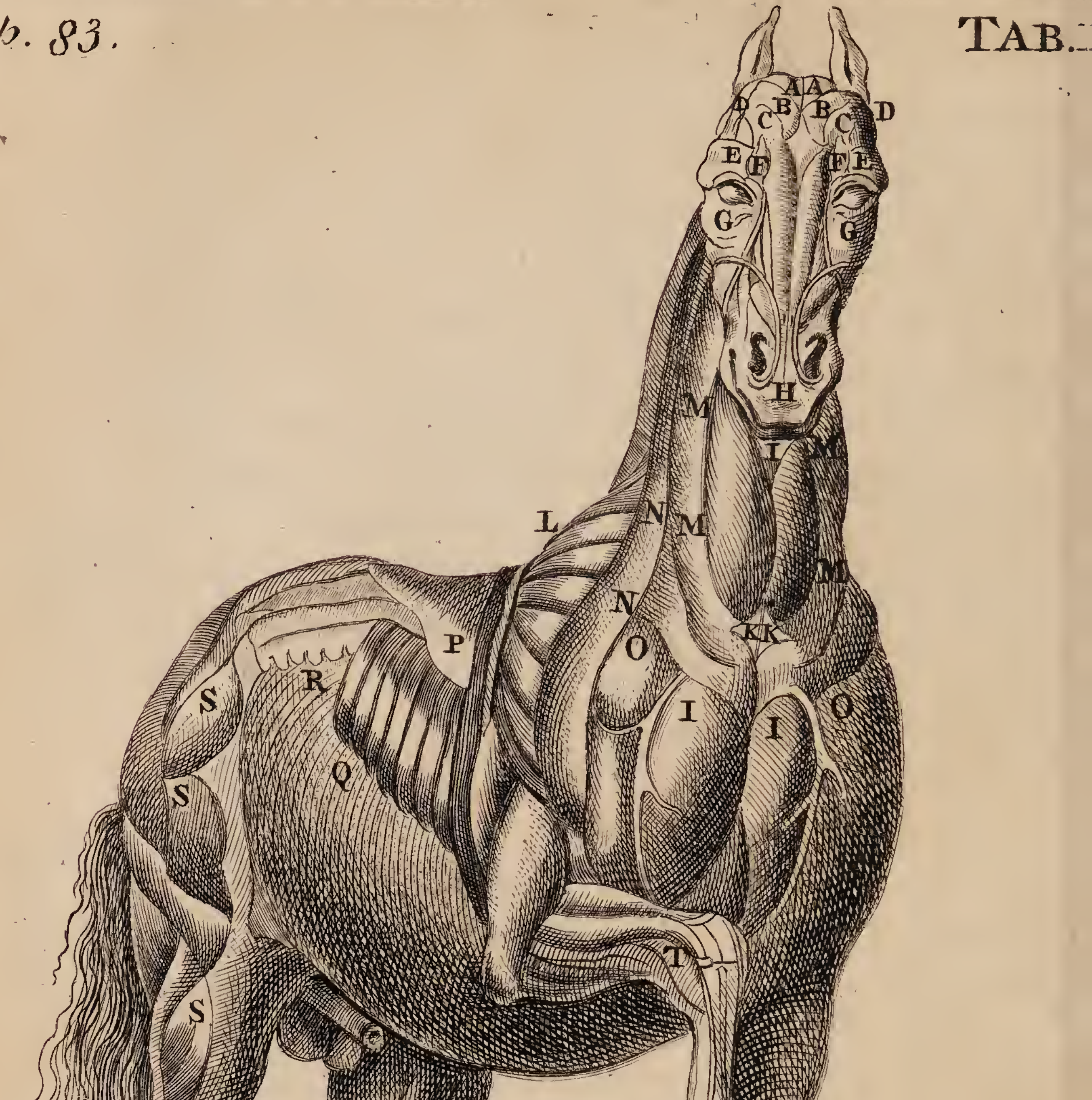
The Back and Loins have four pair of Muſcles, common to both. The firſt are remarkable for their great Length, extending from the Haunch-bones and Os Sacrum, and reach to the two Temporal Bones, one on each ſide. Theſe being attached to the Spines in their paſſage, are a great ſecurity to the Back, and aſſiſt the other three pair in all its motions. When all the Muſcles of the Back and Loins act together, the whole Back is extended; but when the Muſcles of either ſide act ſingly, the Body is inclined to that ſide only.

Of the Lower Belly.

The Lower Belly has five pair of Muſcles, which ariſe from the Ribs, Haunch-bone, Share-bone, Breaſt, and other circumadjacent parts, and are moſtly inſerted into the white Line that divides the Belly in the middle. One pair

p. 83.

TAB.



pair paſs obliquely downwards; another pair obliquely upwards; a third have a ſtraight direction from the Breaſt to the Share-bone; a fourth pair aſſiſt the ſtraight Muſcles in pulling down the Breaſt; the laſt are the tranſverſe pair, which take their courſe from the Loins and lowermoſt Ribs on each ſide, to the white Line.

This Partition, or white Line of the Lower Belly, is abſolutely neceſſary for the Origins and Inſertions of the Muſcles belonging to it; and indeed no other kind of Mechaniſm could have been ſo well adapted to a part ſo large, and of a roundiſh circumference; for had the Muſcles not been determined in the middle, but been ſtretched over the whole Belly, it would have been impoſſible for them to have acted with ſufficient Force and Energy. The Uſe of theſe Muſcles is to warm and comfort the Bowels, which are of ſo tender and delicate a nature, that they have alſo a Caul or Network of fat, and a thick double Membrane to cover them. They are alſo of uſe to make a ſufficient preſſure for the diſcharge of the groſſer Excrements, and to give ſome help to the Muſcles of the Breaſt, Midriff, and Ribs, in Reſpiration.

Of the Breaſt.

The Breaſt has four pair of Muſcles that widen and dilate the Cheſt, and two pair that ſtraiten and compreſs it. Theſe make up that portion of fleſh which covers the Briſket, and all the Breaſt from the Collar-bone downwards to the Pit of the Stomach, incompaſſing moſt of the foremoſt Ribs. Some of them have their derivations forwards, and from under the Shoulder-blades and Rack-bones of the Neck and Cheſt, and ſome backwards from the Spines of the Rack-bones of the Loins and Os Sacrum; and are moſt of them ſo inſerted into the Ribs, as to render their action of elevating and depreſſing the Cheſt eaſy and compleat. The Intercoſtals are the external and internal, and make up that portion of fleſh that fills up the ſpaces between the Ribs. Theſe alſo widen and ſtraighten the Ribs alternately in Reſpiration, and act with the Pectorals and Midriff.

The Midriff.

The *Diaphragma* Midriff (or Skirt, as ſome call it in a Horſe or Bullock) is a muſcular Subſtance that divides the upper Cavity or Cheſt from the Lower Belly. It takes its Origin on the right Side, from a Proceſs of the Rack-bones of the Loins, and on the left, from the uppermoſt of the Loins and lowermoſt of the Breaſt; and is inſerted into the lower part of the Breaſt-bone, and the five inferior Ribs, by which it makes ſeveral points. The middle is a flat tendinous Subſtance, from whence the fleſhy Fibres begin, and are diſtributed like Rays from a Center to its Circumference. When this Muſcle acts alone, it contracts the Breaſt, and pulls the Ribs downwards, by which it aſſiſts the Muſcles of the Lower Belly, in the expulſion of the Fæces; but its chief office is in reſpiration, to which all the Muſcles of the Breaſt, the Intercoſtals, and thoſe of the Lower Belly, are more or leſs ſubſervient, as has been obſerved.

In all the Actions of Reſpiration or Breathing, the Muſcles of the Breaſt have the greateſt force in Men; but in Horſes, and ſome other Creatures of a prone poſition, it is evident the Midriff has alſo a very great force, which ſeems to be plain in broken-winded Horſes; many of which have no other indication of diſtemper, only that the Midriff is ſtretched and relaxed in a very extraordinary manner. In ſuch caſes, the membranous Fibres are, for the moſt part, extremely thin, and the tendinous parts, towards their Inſertions into the Ribs, very ſmall and feeble; by which means it loſes a great deal of that force and ſpring that is neceſſary to its action.

When a Horſe, or any other animal, receives the air into his Lungs, the Breaſt and Ribs are diſtended, which is done by the dilatation of the pectoral Muſcles, by the extenſion of the Intercoſtals, *viz.* the Muſcles of the Ribs, and by the Midriff, which at that time is drawn out, and expanded to its full dimenſions, or in proportion to the quantity of air received into the Lungs. The Muſcles of the Lower Belly act alſo, by their affinity and connexion, with thoſe of the Breaſt and Ribs; which we perceive more plainly in quadrupeds than in men, where the Lungs are upon a level with the parts of the Lower Belly. On the other hand, when the air paſſes out of the Lungs, the Muſcles that draw in or compreſs the Breaſt, and thoſe that compreſs the Ribs, act alternately with the Extenſors of the Breaſt and Ribs. The Midriff, which is ſtretched out in time of inſpiration,

ration, in expiration contracts, and its centre riſes upwards like the bottom of a diſh. And thus far the Muſcles of the Breaſt and Midriff, and other contiguous parts, may be conſidered as the inſtruments of reſpiration: and, as they are by that means in continual motion, muſt be endowed with great ſtrength, and maintained with conſtant nutriment from the Heart, which is ſeated like a fountain in the centre, and ſends forth immediate ſupplies of Blood into all thoſe parts.

The Heart.

The Heart is alſo a Muſcle of a conic figure, the ſhape of which is ſufficiently known, being pretty much alike in all creatures. It is compoſed of Fibres which have a ſpiral direction, by which it contracts and dilates itſelf alternately, as it receives the Blood into its Ventricles from the Veins, and as it diſgorges the Blood into the Arteries.

The Muſcles of the Stomach and Guts.

The Stomach and Guts have each a muſcular coat; that of the Stomach to aſſiſt digeſtion, and the muſcular coats of the Guts, to forward the aliment and fæces through the Inteſtines to their expulſion; which coats being of themſelves but weak, and extremely thin, are therefore helped by the preſſure of the Muſcles of the Lower Belly.

The Anus, or Fundament, has a Sphincter Muſcle ſeated at the extremity of the ſtreight Gut, made up of circular Fibres, and encompaſſing it like a ring, which opens and ſhuts the Fundament, with the aſſiſtance of a Muſcle called its Levator, which alſo preſerves the Gut from falling out. This riſes from the Ligaments of the Hip-bones and *Os Sacrum*, and is inſerted into the ſaid Sphincter.

The Bladder has alſo its Sphincter Muſcle, that the Urine may not paſs involuntarily, as happens ſometimes when it is wounded or much relaxed. The Yard has its Erectors and Dilators, and the Stones their Cremaſter, and Mares have alſo Muſcles belonging to their urinary and genital parts, which I need not here deſcribe, but ſhall go on to the Muſcles of the Shoulders; the knowledge of which being neceſſary for underſtanding the lameneſſes, and other accidents, that happen ſo frequently in thoſe parts.

The Muſcles of the Shoulders.

The Shoulder-blades have four pair of Muſcles ſuited to their ſeveral motions. The firſt are the *Cucullares*, ſo called from their reſembling a monk's hood or cowl. Theſe being ſeated between the Shoulders, cover the top of the Withers; and, when they happen to be fleſhy, cauſe that thickneſs we obſerve on thoſe parts, more on ſome Horſes than others. They ariſe from the hind part of the Head, from ſlender beginnings, and grow broader as they deſcend downwards to their inſertion in the Spine or Ridge of the Shoulder-blades, the Collar and Shoulder-bones. The next pair are the Levatores, or Lifters up, which cover the Collar-bones, ariſing from ſome of the tranſverſe proceſſes of the Neck, terminating in the fore-part of the Shoulder-blades, and draw them upwards and forwards. The third pair lie under the Pectoral Muſcles, ſpringing from the four uppermoſt Ribs, are inſerted into the Anchor proceſs of the Blade-bone. Theſe move the Shoulder-blades forwards towards the Cheſt. The laſt pair lie under the broadeſt part of the Cucullares above deſcribed, riſing from the lowermoſt Spines of the Neck and uppermoſt of the Breaſt, and are inſerted into the baſis or bottom of the Shoulder-blades, by very ſtrong Tendons, which fix them to the Ribs. Theſe draw the Shoulder-blades ſomewhat upwards and backwards. Many of the Shoulder-lameneſſes in Horſes proceed from Strains or other grievances and defects in theſe Muſcles.

The Shoulder, *viz.* that part which reaches from the point of the Blade to the Elbow, has nine Muſcles, which ought alſo to be well conſidered in all the lameneſſes of the Shoulder: for the articulation of the Shoulder and the diſpoſition of the Muſcles in Horſes, is ſuch, that the Shoulder can hardly be diſlocated, as in Men; and if it ſhould happen ſo at any time, it could ſcarce ever be remedied; for though a Horſe will ſometimes appear with a very violent ſtrain, as if his Shoulder-joint was out of place; yet this is only owing to the ſudden relaxation of the Muſcles and Ligaments, and the influx of the Blood and Juices in ſuch quantity, as not only ſwells and miſhapes the part, but renders it incapable of its true motions; and therefore the mechaniſm of the Shoulder, and Shoulder-blades, ought to be well underſtood by thoſe who practiſe Farriery.

The firſt of the Shoulder-muſcles riſes from the Collar-bone, and paſſing over part of the Blade, is inſerted into the Shoulder-bone about its middle. This Muſcle helps to lift the Shoulder upwards. The ſecond riſes from the Spine or Ridge of the Shoulder-blade, and is inſerted into the Neck of the Shoulder-bone, by a ſtrong and broad Tendon. This alſo helps to raiſe up the Shoulder, and both give their aſſiſtance in its circular motions, ſo far as it is capable. The two Depreſſors pull the Shoulder downwards. The firſt has its origin from the *Os Sacrum*, near the Rump, from the Haunch-bone and Rack-bones of the Back, and, with its fellow on the other ſide, ſpreads over a great part of the Back; from whence it is called *Latiſſimus Dorſi*, or the broadeſt Muſcle of the Back. The other riſes from the lower ſide of the Shoulder-blade, and is inſerted into the upper and inner ſide of the Shoulder-bone. The two pair that bring the Shoulder forward, are the pectoral Muſcles, and thoſe which Signiors *Ruini* and *Snape* improperly call the *Cariocoidei*, in regard a Horſe, nor ſcarce any other quadruped, has that Proceſs which in Men is called *Cariocoideus*. It riſes from the interior part of the Blade-bone, near its brim, and is inſerted into the middle of the Shoulder-bone. The pectoral Muſcles are ſo called, becauſe they cover moſt of the Breaſt, and are inſerted into each Shoulder-bone a little below their round Heads. The remaining three Muſcles move the Shoulder backwards. The firſt has its origin from under the Spine of the Blade-bone, and is inſerted into one of the Ligaments of the Shoulder-bone. The ſecond is placed between the Shoulder-blade and Ribs, and is inſerted into another Ligament of the Shoulder-bone. The laſt riſes from the lower angle of the Blade-bone, and is inſerted into the Neck of the Shoulder-bone.

The motions of the Shoulders in Horſes, and in moſt quadrupeds, are more limited than in men, their chief action being forwards and backwards, wherein they have a capacity of being raiſed higher or lower, according to their ſeveral requirements. A Horſe's Shoulders alſo move a little ſpace outwards and inwards, which is neceſſary to their going on uneven ways. They have likewiſe ſome capacity of a circular rotation, which, however, is but ſmall, and when a Horſe performs any thing by ſuch motions, it is, for the moſt part, more owing to art than to nature, *viz.* when his Shoulders have been well ſupled by a good horſeman, that is, when the Muſcles and Ligaments have been ſtretched, and rendered pliable, by a ſkilful management of the rider in long continued exerciſe; and therefore, when a Horſe is brought to perform any of thoſe genteel eaſy airs, which we obſerve in the Manege, eſpecially when they go through their exerciſes in narrow circles; though the Shoulders have a great ſhare in theſe exerciſes, and ſome Horſes are much more ſuited to them, by the ſymmetry of their Shoulders, than others, yet all the Joints of the Neck, Back, and Loins, muſt alſo contribute more or leſs thereunto. The Shoulder-blades of a Horſe lie like two ſhields on each ſide, which confines the actions of his Shoulders very much to ſtraight motions; whereas in men, they are placed behind,

TAB. X. *p. 91.*

Fig. I.

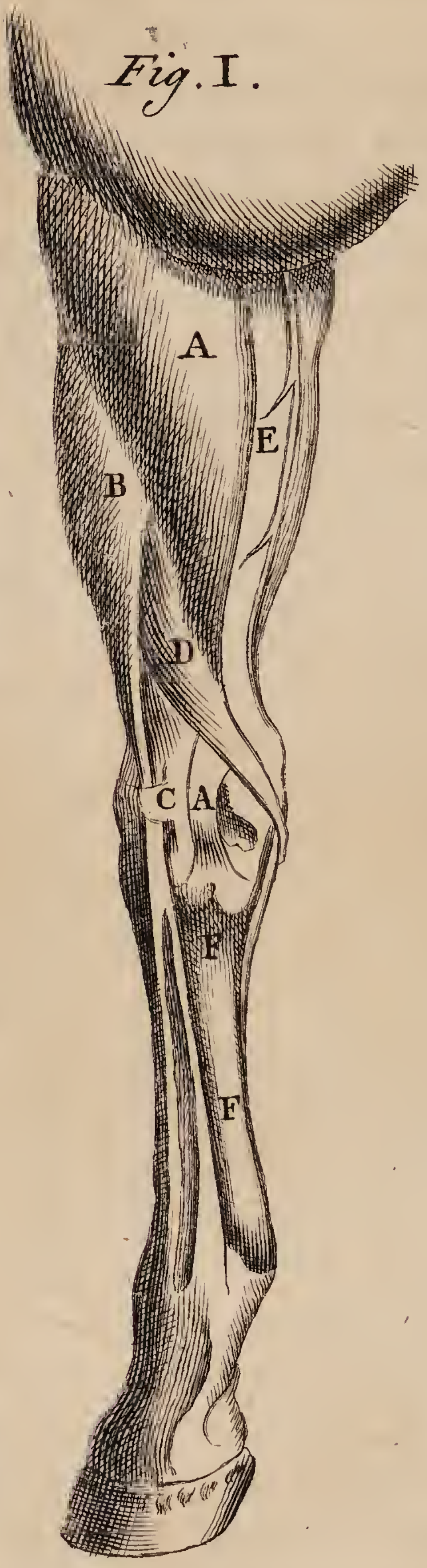
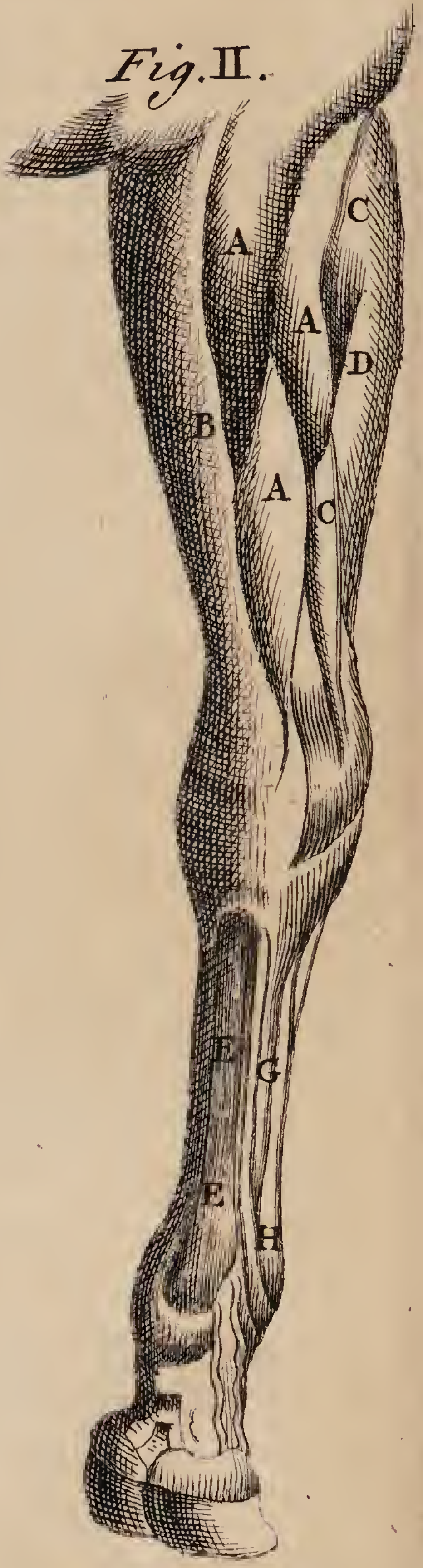


Fig. II.



hind, ſo that they leave the actions of the Shoulders and Arms without ſuch reſtraint. In a Horſe, the Collar-bone is fixed, and in a great meaſure immoveable; but, in man, it is articulated with the Shoulder-blade, and participates more or leſs in all its motions; whereby a man is enabled to turn his arms ſeveral different ways; for which motions quadrupeds have no proper capacity.

The Muſcles of the Fore-leg.

The Fore-leg is raiſed upwards by two Muſcles. The firſt takes its beginning from the upper brim and anchor-like Proceſs of the Blade-bone, the ſecond from the middle of the Shoulder-bone, and are both inſerted into the inſide of the Knee, a little above the Joint. Two Muſcles alſo extend the Leg, and bring it ſtreight; one of which has its origin from the lower edge of the Blade bone, and the other from the Shoulder-bone, and are both inſerted into the outſide a little above the Knee. Theſe, with two other ſmall Muſcles, compoſe the fleſhy part of the Arm, which reaches from the Elbow to the Knee, and perform all the motions of the Fore-leg, falling ſhort of the number of Muſcles that are in the arm of a man, a Horſe having but one Bone, and but two perfect motions; whereas, in a man, there are two Bones, the *Radius* and *Ulna*, by which the hand and arm are turned various ways; and therefore require more Muſcles to perform ſo many different actions.

Of the Shank.

The Shank, which reaches from the Knee to the Paſtern, has two Muſcles that bend the Knee, and two that extend it. The Benders riſe from the inner knobs of the Shoulder-bone, and, paſſing beyond the Knee on the inſide, are inſerted into the hinder-part of the top of the Shank. The Extenders derive their Origins from the outer knob or proceſs of the Shoulder-bone, and their Tendons paſſing over the Knee, are inſerted into the fore-part of the Head of the Shank, and, with the Ligaments to which they adhere, compoſe the tough ſubſtance that covers the Knee. Theſe extend the Leg, when a Horſe puts his Leg out ſtreight, or ſtands on the ground.

Of the Fore-paſterns, &c.

The Fore-paſterns, and Coffin-joints have only, as the Leg and Shank, two Flexors and two Extenſors; theſe being ſufficient for all the motions of the Feet; and that theſe motions may be the more perfect and ſecure, the Benders, or Flexors, are ſo contrived, that the firſt reaches from the Shoulder downwards to the hinder part of the Paſtern-joint, where it is inſerted. The Tendon of this Muſcle forms the Back-ſinew of the Fore-leg. The other takes its origin from the upper part of the Cubit, or Shank-bone, and is inſerted into the Coffin-bone. The firſt that extends the Paſterns, ſprings from the outer knob of the Shoulder-bone, and is inſerted into the fore and outer part of the Paſterns, and into the Coffin-bone. The other riſes fleſhy, from the inner knob or proceſs of the Shoulder-bone, but ſoon grows into a ſlender Tendon, which deſcends to the bottom of the Foot, where it has a fleſhy expanſion under the Sole, which is often attended with exquiſite pain, when it happens to be bruiſed or hurt.

TAB. XI. *p. 93.*

Fig. I.

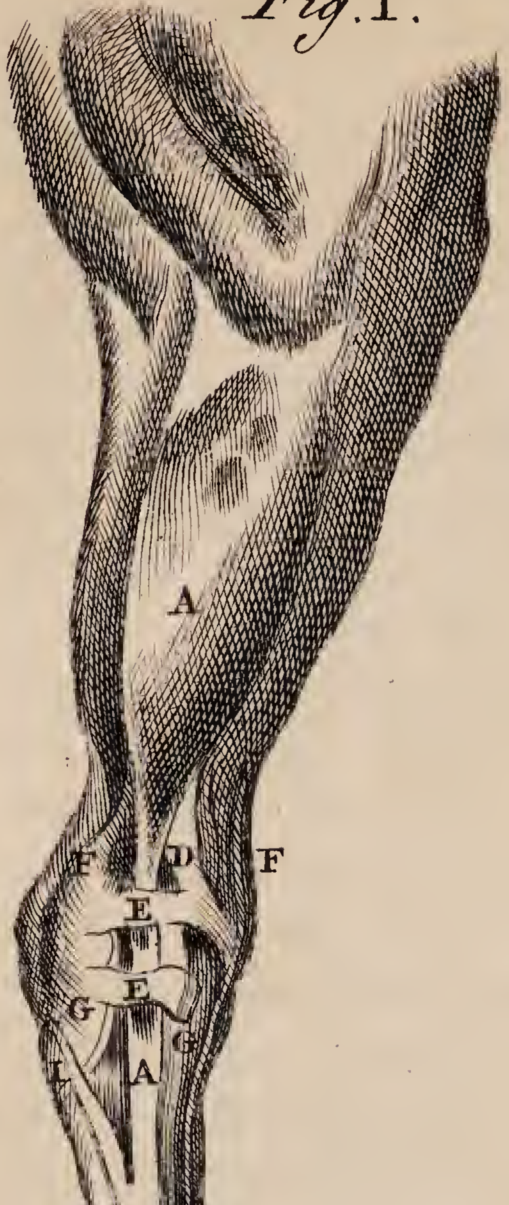
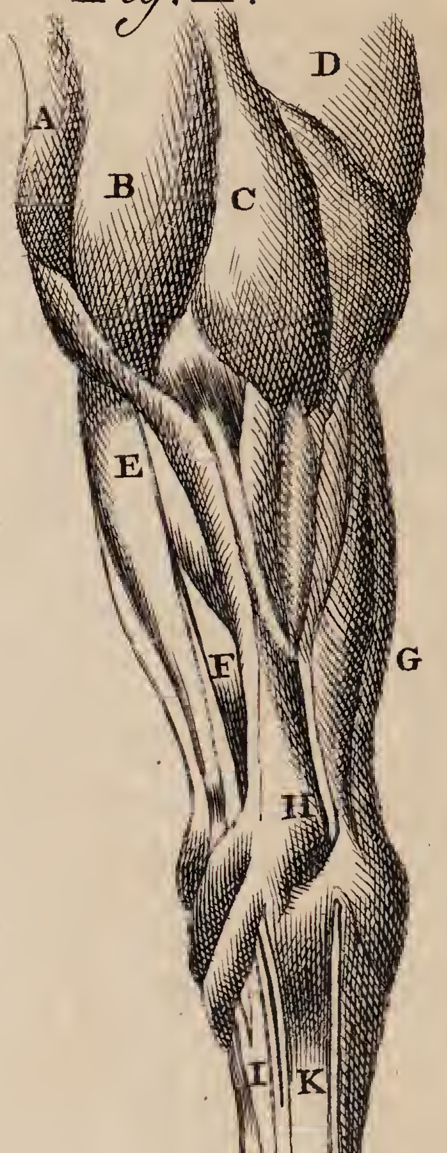


Fig. II.



Towards the Inſtep forwards, and in the bending of the Paſtern behind, is a ſmall but ſtrong Ligament like a ring, under which the Tendons of the Muſcles that paſs to the Paſtern and Coffin-bone, are ſecured, ſo as to preſerve their motions; which, conſidering the great length of theſe Tendons, would be much weaker, and ſcarce of any uſe, without ſuch a contrivance.

The Muſcles of the Hindparts

As to the Muſcles of the Hind-parts, they are not only more numerous about the Hips and Loins, than about the Shoulders, a Horſe having a greater diverſity in his motions behind than before, but are alſo endowed with greater force; and this ſeems to be the more neceſſary, becauſe many of the Services required of them depend very much on the ſtrength and activity of the Hind-parts. Alſo it may be obſerved, when a Horſe is under no reſtraint, but at his full liberty, he always makes uſe of his Heels for his defence, wherein he exerciſes ſuch ſtrength and force, when he laſhes out, as is ſcarce to be imagined.

The Muſcles of the Thigh.

The Thigh, which reaches from the Huckle or Whirl-bone to the Stiffle or Knee-pan, is moved by ſeveral Muſcles. Three bend the Thigh forwards, or lift it upwards, *viz.* when the Stiffle is raiſed towards the Belly, and three draw it backwards. The Thigh is alſo turned inwards by one Muſcle, which has ſeveral origins, and is turned outwards by four Muſcles. The firſt of the Benders of the Thigh riſes from the tranſverſe Proceſſes of the lowermoſt Vertebræ of the Cheſt, below the Withers, and two or three uppermoſt of the Loins, and is inſerted by a ſtrong round Tendon into the fore-part of the leſſer Head of the Thigh-bone. The ſecond riſes from the Share-bone, and is alſo implanted by a ſtrong round Tendon, into the leſſer Head of the Thigh-bone, near the Stiffle. The third, and all the other Muſcles of the Thigh, except the two laſt that turn the Thigh obliquely, have their origins from the Hip-bones, Rump, and Os Sacrum; ſome from their outſides, others from their inſides, ſome from a higher or more diſtant derivation, and ſome have a nearer origin, and are all inſerted either immediately above the Stiffle, or at the very extremity of the Thigh-bone. The inſertion of theſe Muſcles being more at the extremity of the Thigh-bone in a Horſe than in Man, ſeem the more neceſſary, becauſe by this means they are able to move a greater weight, and lift the Thigh higher, than if their inſertions had been more upwards into the Neck of that Bone. Beſides, the Thigh-bone of a Horſe is much ſhorter in proportion than in man, and therefore requires this ſort of Mechaniſm in the inſertion of theſe Muſcles, to perform all the ordinary motions of the Thigh. Theſe compoſe the fleſhy part of the Hip, eſpecially thoſe that anſwer to the *Gluteus externus*, *internus* and *medius*; and ſome of them have very ſtrong Fibres, and paſs over the Whirl-bone and Hip-joint, to which they are a very great ſecurity. The laſt pair that turn the Thigh obliquely, riſe the one from the outer circumference of the whole of the Iſchium, and the other from the inner circumference, and are both inſerted near the great Rotator of the Thigh, being like a ſtay to prevent any irregular motions in the other Muſcles.

Of the Hind-leg.

The Leg has three ſeveral motions, *viz.* it is extended by five Muſcles, bended by four, and moved obliquely by one ſingle Muſcle. The Leg comprehends that part which we uſually term the Thigh in a Horſe, which reaches from the Stiffle to the Hock.

The firſt of the five Muſcles that extend the Leg is broad and thin, covering the greateſt part of the other Muſcles of the Thigh, by a membranous Expanſion, which takes its origin from the upper part of the *Os Ilium*, and ſpreading over the Stiffle, is inſerted into the upper and fore-part of the *Tibia* or Leg-bone. The ſecond riſes near the firſt, and is alſo inſerted into the Leg-bone forwards, a little below the Stiffle. Theſe two take their courſe ſomewhat obliquely; but the third has a ſtreight direction along the fore-part or edge of the Thigh, till it reaches the Stiffle, where it turns into abroad and ſtrong Tendon, that adheres cloſely to that Bone in its paſſage over it, and is inſerted into the upper head of the Leg-bone. The remaining two are the largeſt, and make up the chief bulk of the Thigh on each ſide, the firſt ariſing from the great Trochanter and neck of the Thigh-bone, and the other from the leſſer Trochanter. The Tendons of theſe two Muſcles alſo paſs over the Stiffle, and unite with the former, and are inſerted into the upper part of the Leg-bone, the one towards the outſide, and the other towards the inſide. The Tendons of theſe Muſcles, eſpecially of the laſt three, compoſe that ſtrong Cap or cover which lies over the Knee-pan, bracing it ſo firmly, that it is almoſt impoſſible to diſplace it. Theſe Muſcles not only extend the Leg ſtreight, but when ſome of them act ſingly, turn it a little ſideways.

The two firſt Benders of the Leg make up the bulk of Fleſh that is on the hind part of the Thigh. They both ariſe from the knob of the *Coxendix* or Rump-bone, and are inſerted backwards, below the bending of the Leg, behind the Stiffle, one on each ſide. The third riſes near the firſt and ſecond, and the fourth from the middle of the Share-bone, and paſſing downwards between the other two, are inſerted into the back part of the Leg-bone towards its middle, which gives it the force that is neceſſary to lift up the Leg, ſo as to bring the Hock towards the Hip. When theſe Muſcles act together, they draw the Leg directly backwards, but when they act ſingly, eſpecially the two firſt, they incline it to this or that ſide. There is beſides a fifth Muſcle, which contributes chiefly to the oblique motions of the Leg, which riſes broad and nervous from the outer Head of the Thigh-bone, and paſſing obliquely down the Thigh, is inſerted into the hinder part of the upper prominence of the *Tibia* or Leg-Bone.

Of the Inſtep.

The Muſcles of the lower part of the Leg or Inſtep, come next to be deſcribed. The Inſtep comprehends all that part which reaches from the Hock to the Paſtern-Joint, uſually called the Small of the Leg. It has three ſeveral Motions, *viz.* it is bended, extended, and moved a little ſideways. A Horſe bends his hind Legs when he goes on his Haunches, or when he lifts up his hind Legs in any kind of Motion; and this is performed chiefly by two Muſcles. The firſt riſes fleſhy, from the upper Appendage or Apiphiſis of the Leg-bone, a little below the Stiffle, cleaving cloſe to that Bone in its deſcent, and paſſing beyond the griſly part of the Hock, is divided into two ſmall Tendons, that are inſerted into the foreſide of the Inſtep-bone, whereby it raiſes the Inſtep and Foot upwards, at which time the Hock is alſo bended. The ſecond takes its origin likewiſe from the upper Appendix of the Leg, a little below the Stiffle, and is inſerted into the outſide of the Inſtep bone, by which it aſſiſts the other in raiſing the Inſtep and Foot upwards, and alſo inclines it ſomewhat outwards. The Muſcles that extend the lower Leg and Foot, are three in number, and make up the greateſt portion of Fleſh, which reaches from the Stiffle to the Hock, and which is uſually named the Thigh of a Horſe. Theſe three Muſcles anſwering both in their number, reſemblance and uſe, to thoſe of the Calf of a Man's Leg; the firſt riſes by two beginnings, from the inner and outer Head of the Thigh-bone, and correſponds with the *Gaſtrocnemius externus*, and the ſecond with the *internus*, which lying under the firſt, both their Tendons unite with the third, which anſwers to the *Plantaris*. The Tendons of theſe three

Muſcles joining together form the Maſter-Sinew, which is implanted into the back part of the Ham or Heel of the Hock, and anſwers to the *Tendo Achillis* in the human Heel. By theſe three Muſcles a Horſe extends his Leg, and ſtretches it out ſtreight. The laſt of theſe, *viz.* the *Plantaris* or Muſcle of the Sole or Tread, leaves the other two at the Heel of the Hock, and paſſing ſinewy along the hind part of the Inſtep-bone and Paſtern, is braced down at the bending of the Heel by the annular Ligament, and then turning fleſhy, is ſpread all over the bottom of the Foot under the Sole in the ſame manner as the *Palmaris* abovementioned, in the Deſcription of the Fore Foot. The two Muſcles that move the Leg and Foot ſideways, have their Origins, the firſt from the upper end of the Leg-bone below the Stifle, its uſe being to turn the Foot inwards, and the other riſing from the hinder part of the ſame Bone, and paſſing along the outſide of the Hock, is inſerted into the Coffin-bone, and turns the Foot obliquely outwards.

Of the Hind-Paſterns, and Coffin Joint.

The laſt of the Muſcles, are thoſe that bend and extend the Paſterns and Coffin-joint. The Benders are two, the firſt riſes from the upper and hinder-part of the Leg-bone, and paſſing down the Inſtep and Paſterns, is inſerted into the Coffin-bone; the ſecond riſes a little below the Hock, and is alſo inſerted into the Coffin-bone. Theſe bend the Paſterns and Coffin backwards. The Extenſors are alſo two, the firſt riſes from the inſide of the Shank a little below the Stifle; the ſecond from the fore-part of the annular Ligament, on the upper part of the Paſtern-joint, and are both inſerted into the Coffin-bone; theſe extend the Foot, and plant it ſtreight upon the Ground. The number of Tendons, Nerves, and Blood Veſſels inſerted into the Coffin-bone, occaſions many untowardly accidents in the Feet of Horſes, which ſometimes cannot be eaſily cured without the ſevereſt Treatment.

CHAP. III.

Of the Hair, Cuticula or Scarfskin, the Cutis or Hide, the fleſhy Pannicle, and other Integuments of the Body of a Horse.

The Hair.

I Need not detain the Reader with any Curioſities about the Hair, ſince every one knows that the Hair is not only a defence, but an ornament, eſpecially to thoſe fine Horſes that have good Manes and Tails. The Hair is thought to be produced of Moiſture; and it may be obſerved, the Hair is thicker, and lies ſmoother in young Horſes, than on the old that have leſs moiſture; and when the Skin has been wounded, burnt or ſcalded, ſo as to alter its Texture by contracting the Fibres into a ſmooth, gloſſy Scar, or Cicatrix, the part either remains altogether bare, or if any Hair grows, it generally comes white, and not ſo ſtrong and thick as on the other parts, that have received no injury.

The Cuticula or Scarfskin.

The Cuticula or Scarfskin, is the uppermoſt cover thro' which the Hair grows. It is extended ed over the whole Skin; and is that which riſes into a Bliſter, when any part has been burnt or ſcalded, and when the Blood in the external parts happens to be inflamed to any extraordinary degree, as in the Farcy, and other diſtempers of the Skin. The Cuticula has been obſerved by Glaſſes, to be made up wholly of Scales, which are full of Poruli or little Holes infinitely ſmall, for the paſſage of the perſpirable matter in Tranſpiration, which diſcharge is ſo neceſſary to the preſervation of Health, that when theſe Pores are ſtop'd by Colds or any accident, Fevers, and other ſickneſſes generally enſue. The Cuticula ſeems to be form'd of a Mucus, or Moiſture that comes from the Skin, condens'd by the Air, and as it is chiefly made of excrementitious Matter, it is by that means inſenſible of Pain, or any other ſenſation. And whatever pain, or feeling of any kind, in an animal Body, is tranſmitted thro' it, by reaſon of its rare and exquiſitely fine Texture.

The Cutis or Hide.

The Cutis or Hide, which lies under the Cuticula, is a ſtrong membranous ſubſtance, made up of compact Fibres laid cloſe together, and is ſuſceptible of Pain upon the leaſt touch, when the Cuticula or Scarfskin is any ways fretted or rubbed off, by reaſon of the innumerable branches of Nerves, which are diſtributed over its whole ſurface. Beneath the Skin are ſeated the miliary Glands, which are exceeding ſmall and numerous, and ſeparate the ſweat, which riſes like a dew thro' the Pores of the Skin and Scarfskin.

The fleſhy Pannicle.

Horſes, and ſeveral other large animals, have beſides the *Cuticula* and Skin, a fleſhy expanſion, which lies immediately under the latter, called the fleſhy Pannicle, and is made up of muſcular Fibres, whereby the Skin is moved and drawn into Wrinkles, to ſhake off Duſt, Flies, or any thing elſe that hangs looſe upon the Hair. It is moſt thick and diſtinct over the Ribs, Flanks, Sides of the Belly, as alſo on both ſides the Neck, but adheres ſo to the Skin, that it is ſcarce to be diſtinguiſhed from it, but where the Skin is looſe and moveable. It is alſo a great defence, and ſerves to keep a Horſe warm in very cold Weather.

Membrana Adipoſa.

Underneath the fleſhy Pannicle lies the *Membrana Adipoſa*, made up of little Cells filled with Fat, and in ſome diſeaſed Horſes are very much diſtended with Water. Theſe Cells ſeem to have communication one with another, or at leaſt their Membranes are ſo thin, that they are eaſily ſeparated, and laid open one into another, which may be perceived, by blowing into them with a Blow-Pipe; and I have known Horſes ſtak'd near the Briſket, where the Wounds being pretty large, have drawn in ſuch a quantity of air, that it has filled the whole Body, to a very ſurpriſing degree, which were recovered firſt by a plentiful diſcharge of air and water, and at laſt of well digeſted matter. This Membrane is thickeſt on the lower Belly and Hips, between the Interſtices of the large Muſcles, and in ſome very fat Horſes; it is alſo pretty thick on the Neck and Cheeks, but grows thin about the Limbs, and other bony and dry parts. The uſe of this Fat is various, it ſerves to warm and comfort the Parts to which it adheres, to lubricate the Muſcles, ſo as to preſerve them from being abraded and worn by their frequent Motions, for every one knows that a Horſe always indures labour the better when he is in Fleſh, and has a moderate degree of Fat; but when a Horſe is over-loaded with Fat he moves heavily, like a piece of clock-work that has been too much oil'd: for the ſame that helps to keep the Fibres of the Muſcles moiſt and pliable, and fit for action, when it ſuperabounds, relaxes and clogs their motions. Beſides this uſe of the Fat, it is is probable, ſome portion of it is drawn back into the Maſs of Blood, perhaps to preſerve it from viſcid Coheſions, and I am the more apt to think there is ſuch a communication, becauſe I have obſerv'd the Blood-Veſſels extremely filled with Fat in Horſes, that have dy'd ſuddenly after violent exerciſe in hot Weather, whereof I ſhall give ſome account in the enſuing part of this Treatiſe.

The common Membrane of the Muſcles.

The laſt or innermoſt Cover, which ſome have reckoned among the Integuments, is the common Membrane of the Muſcles, from a ſuppoſition, that all the Muſcles of the outward parts of the Body, are wrap'd up in one Membrane, that ſerves as a common cover to the whole; but this cannot be eaſily diſtinguiſhed from the proper Membranes of the Muſcles, which have all of them a communication one with another, by innumerable little Filaments or Threads: and as the lateſt

Anatomiſts have taken little notice of any ſuch Membrane, it will be unneceſſary to detain the Reader with the uncertain Deſcriptions that others have given of it.

CHAP. IV.

Of the Parts contained in the Lower Belly.

The *Peritonæum.*

THE firſt thing that offers to view, in opening into the Lower Belly, is the *Peritonæum*, a double Membrane of an oval Figure which covers the whole Guts. Its inſide is ſmooth, and lined with a Mucus, which helps to keep the Guts moiſt; from this all the parts of the Lower Belly are furniſhed with their proper Membranes. It has ſeveral Ligaments, by which the Guts are ty'd in their proper ſituation, which preſerve them from being intangled by violent motions, and it alſo affords a ſtrong Ligament to the Liver; and within its Duplicature are a vaſt number of Veſſels, which have communication with all the parts of the lower Belly.

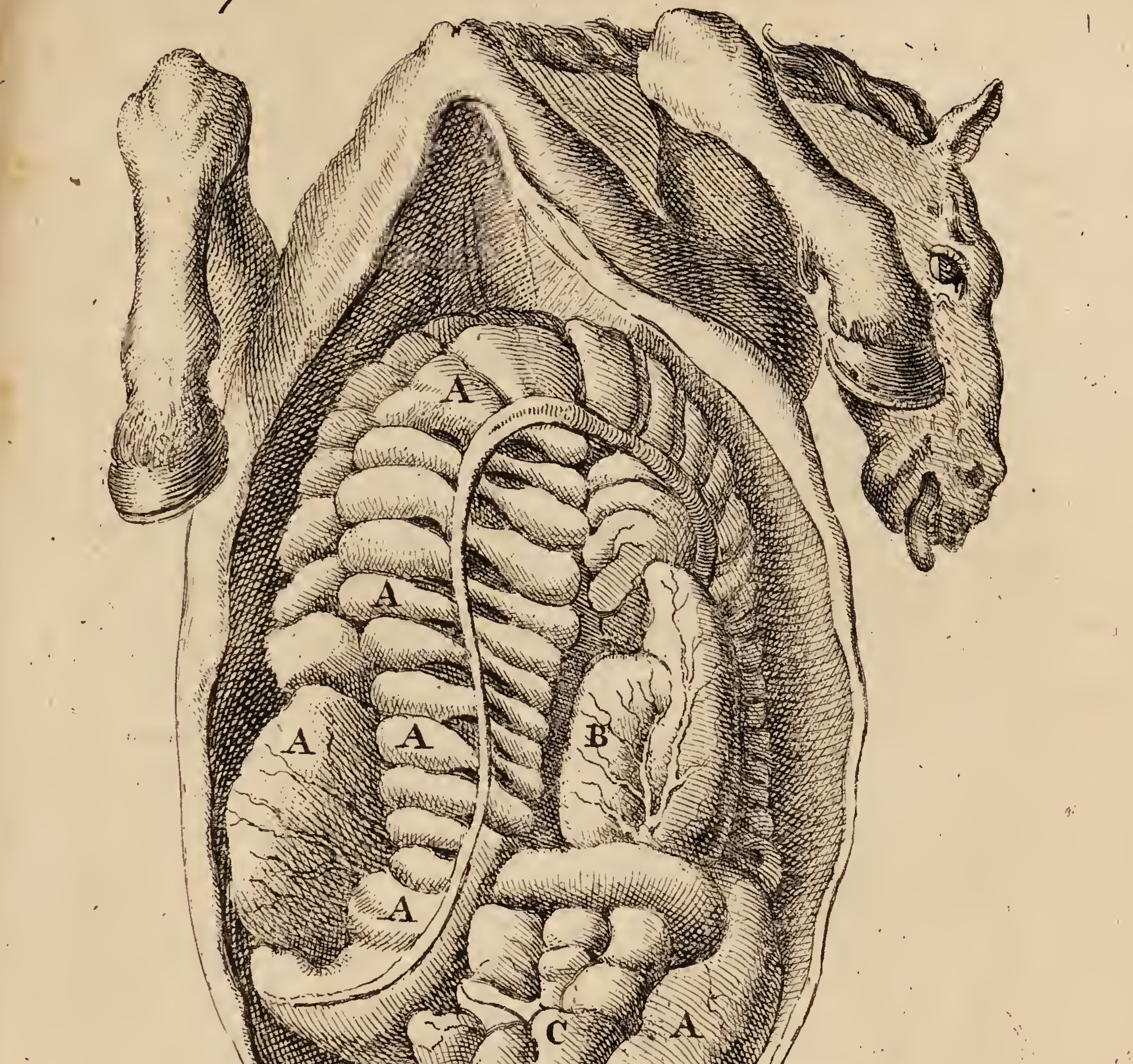
The *Omentum*, or Caul.

The *Omentum*, or Caul, is a double, thin, tranſparent Membrane, interlarded with Fat, which both ſerves to keep the Guts warm and to moiſten them. It adheres to the bottom of the Stomach, to the Spleen, and hollow ſide of the Liver, to the Gut Colon, the Sweetbread, and to the beginning of the ſmall Guts, and is embroidered with a great number of Veins and Arteries, that communicate with the Stomach, Spleen, and Guts, &c.

Gullet. The *Gullet* paſſes from the Mouth to the Stomach, and therefore cannot well be ſeparated in its deſcription, from the Parts of the lower Belly; it penetrates thro' the opening, or hole of the Midriff, and enters the Stomach on its left ſide. It is compoſed of three Coats, the outer, and innermoſt membranous, and the middle Coat muſcular. The Stomach has alſo the ſame number of Coats, the external membranous, the middle muſcular, and the innermoſt alſo membranous, full of ſmall Glands, which ſeparate a Mucus to keep it from growing too dry, that would be a hindrance to digeſtion, which ſeems to be partly perform'd, by the Liquids ſeparated from the Glands of the Mouth in chewing, by the Liquids of the Stomach itſelf, and partly by its muſcular Action, whereby it is alternately contracted and dilated, as all other muſcular Parts are when the Stomach is contracted, the innermoſt Coat is drawn into Folds, which are plain to be ſeen in the Stomach of a Horſe, and theſe Folds increaſe as the Stomach empties itſelf, by which it retains the Aliment longer in the latter part of digeſtion, than after feeding.

The Guts. The Guts are, according to *Ruini* and *Snape*, reckoned ſix in Number, *viz.* The ſmall Gut, which in a Man is divided into the Duodenum, Jejunum, and Ilion, and in a ſizeable Horſe is about twenty-ſix yards in length. The *Cæcum* or Blind Gut, the three Colons, and the Streight Gut. The Blind-Gut, which in a Man is not much bigger than a gooſe-quill, or a common earth-worm, in a Horſe is pretty large,

TAB. XII. *p. 104.*



large, and of a triangular ſhape, and ſeems only like a Valve to retain the Aliment, that it may not paſs too haſtily downwards into the other Guts, before the Body has received its proper nouriſhment from it. The three Colons are divided by two ſmall Necks of about half a yard in length each. This Gut is drawn up into ſeveral *Sacculi* or Purſes by two Ligaments, one of which runs along the upper ſide, and another along the under ſide, which, with a Valve at the entrance, ſerve alſo to detain the Aliment, until the nutricious Juices are wholly extracted from it. The Colons reach to the ſtreight Gut, which is ſo called becauſe it goes in a ſtreight line, without any circumvolution, or turning along the inſide of the Back to the Fundament, and is only about half a yard or little more in length. Its Coats are conſiderably thicker than the Coats of the other Guts, the middlemoſt being fleſhy and muſcular. All the Guts are lined on the inſide with a Mucus that preſerve them from being hurt by the roughneſs of their Food, or the acrimony of ſharp Humours. They have alſo ſeveral ſmall Glands or Kernels, that ſeparate continual ſupplies of Moiſture, tho' theſe are ſo ſmall, that they are ſcarce to be perceived even in a Horſe, except about the extremity of the ſtreight or great Gut.

The Me-ſentery.

The Guts are faſtened to the Back by the *Meſentery*, which in a Horſe is about nine Inches broad from the Guts to the Back, taking its riſe from the third *Vertebra* of the Loins, and is made up of three Membranes, the middlemoſt of which is full of ſmall Glands and Blood-Veſſels. At its riſe it is gathered together in a great many Plaits or Folds, which being open in that part to which the Guts adhere, cauſes them to lie in thoſe circumvolutions and turnings wherein we always obſerve them, which not only ſerves to hinder the too ſudden deſcent of the Aliment, but prevents any total obſtruction or twiſting in them, which, conſidering their great Length, might eaſily happen if they were not thus ſecured. But the Meſentery is ſtill of further uſe, in regard the finer part of the Aliment is carry'd in certain veſſels, that take their courſe from the ſmall Guts acroſs this Membrane, in order to its conveyance into the Blood. For when the Food is ſufficiently digeſted in the Stomach, it falls into the firſt Gut, where it is further attenuated by a mixture of Bile from the Liver, and of the pancreated Juice from the Sweetbread. The finer part thereof being chang'd into a white ſubſtance like Milk, call'd Chyle, is ſtrain'd from the coarſer Aliment, by the force of the Midriff and Muſcles of the Lower Belly, into the abovementioned veſſels called the *Lacteal* or milky Veſſels. Theſe are very ſmall, and ſcarce ever to be ſeen but in Animals opened alive immediately after feeding, where they appear like white Hairs running all acroſs the Meſentery. By theſe the Chyle or milky Subſtance is carry'd into a ſmall receptacle, and from thence convey'd thro' a little Tube or Pipe, called the *Thoracick Duct*, upwards along the Thorax or Cheſt, which has ſeveral Valves to

The Lacteal or Milky Veſſels, with the Courſe of the Aliment.

TAB. XIII. *p. 106.*

Fig. I.

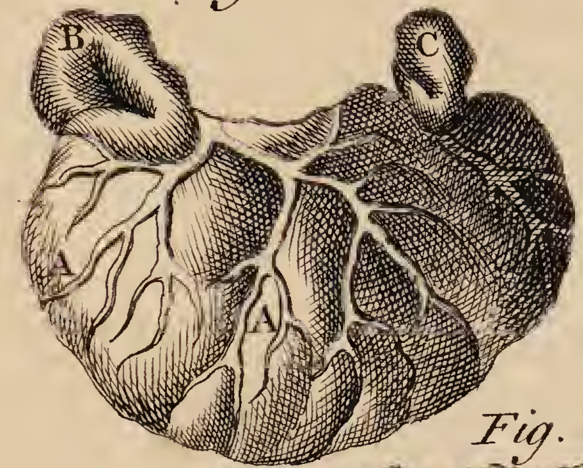


Fig. II.

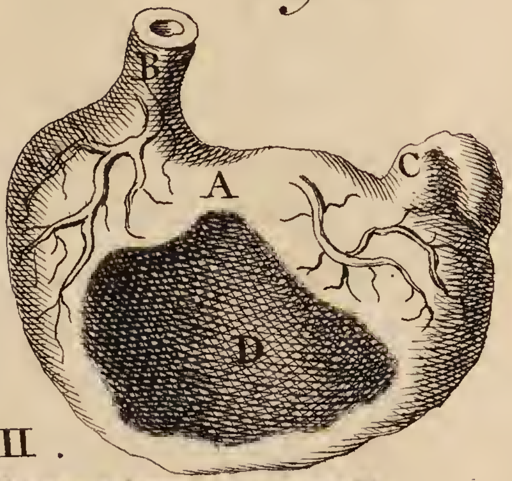
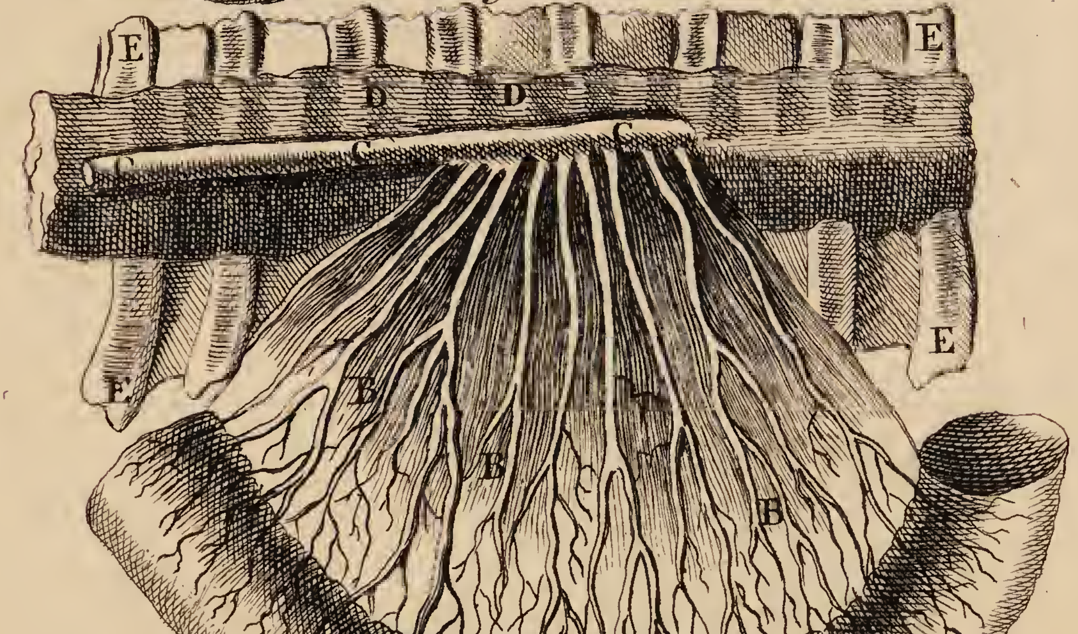


Fig. III.

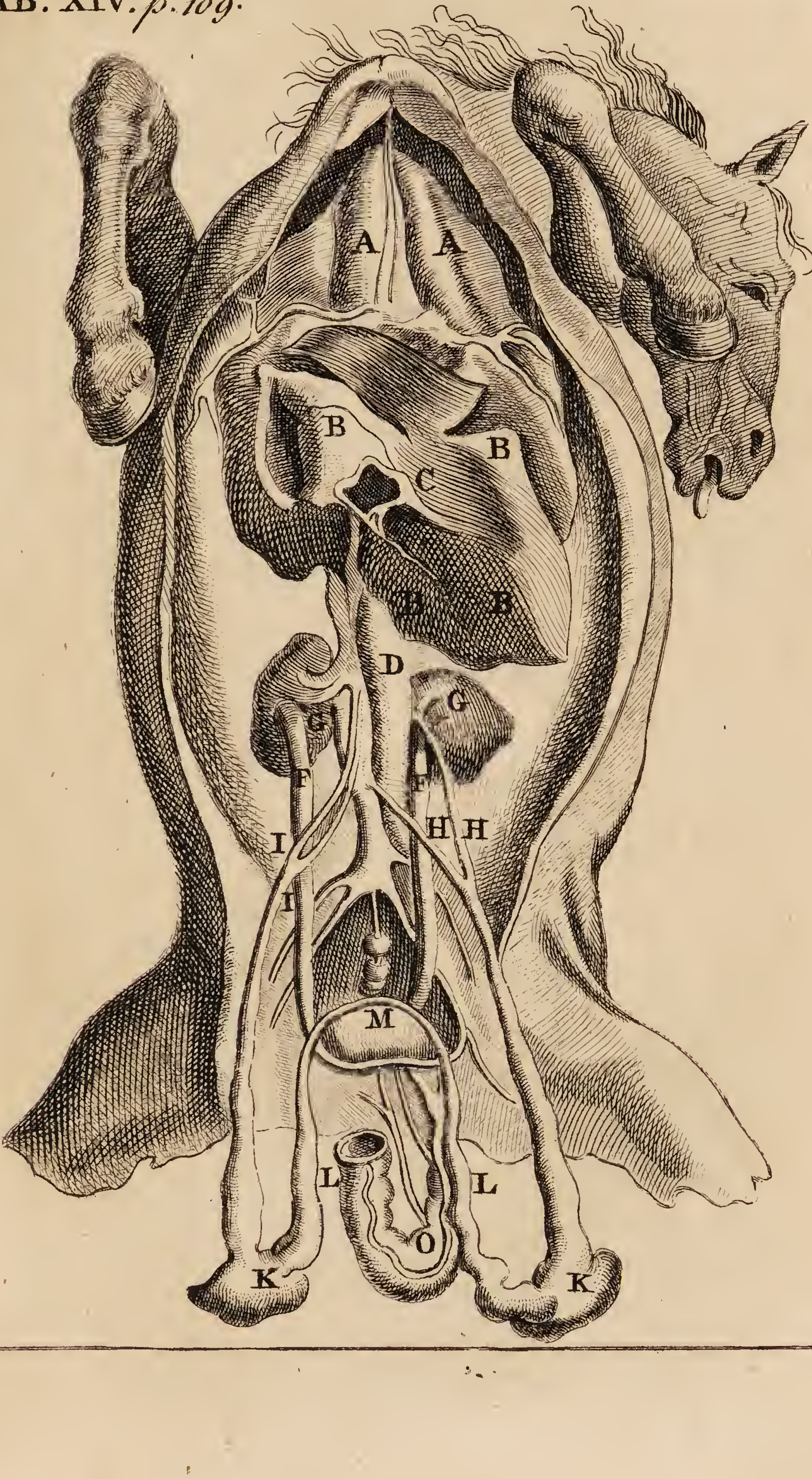


to forward its paſſage, and prevent its return back again. From the Thoracick Duct, the Chyle is emptied into the ſubclavian Vein under the Collar-bone, where it mixes with the Blood, and paſſes from thence to the Heart. There are alſo a great number of lymphatick Veſſels, which empty a pellucid fine Water or Lymph, from the lymphatick Glands that are placed in almoſt all parts of the Viſcera, and is mixed with the Chyle in its paſſage at ſeveral openings, whereby it is further attenuated and rendered more fit to incorporate with the Blood, ſo as to paſs the more readily thro' all the minuteſt Veſſels, in its courſe of Circulation. The Aliment having the finer Parts or Chyle thus ſtrain'd from it by the Midriff and abdominal Muſcles; the remainder being turned into Dung, is by the ſame force and periſtaltick Motion of the Guts preſſed downwards to its ejectment.

The Liver. The Liver is a glandular Subſtance, and by far the largeſt that is to be met with in the animal Body. It is of a duſky red colour, and in ſome places a little variegated or ſhaded. It is ſeated on the right ſide of the Belly immediately under the Midriff. In a Horſe it is divided into four Lobes, whereby it is preſerved from being hurt by any violent Motion. The right Lobe is by far the largeſt. The outſide is convex, and its inſide concave or hollow, to make way for that Portion of the Stomach and Guts which lie under it. The upper part is much thicker than its lower, and all its Edges extremely ſmooth; ſo that it can be no ways hurtful to the other Viſcera. It is alſo ſecured by Ligaments, one from the Midriff, a ſecond, or a portion of the ſame, from the Breaſt-bone, by which means it can neither fall downwards nor ſideways, and the Umbilical Vein, whereby the Fœtus is nouriſhed, becomes its ſuſpenſory or third Ligament; ſo that it can neither puſh forwards in galloping or going down hill, nor preſs too hard upon the ſoft parts that lie under it. The Liver has one peculiar Veſſel called the *Vena porta*, that receives Blood from the Veſſels of the Spleen, Sweetbread, and Guts, which is diſperſed thro' its whole ſubſtance, and emptied into the *Vena Cava* that returns it to the Heart. It has alſo its proper Veſſels by which it is nouriſhed and maintain'd. One uſe of the Liver is to warm and comfort the lower part of the Stomach, and other *Viſcera*, and may in ſome meaſure contribute to aſſiſt digeſtion, tho' its chief uſe is for the ſecretion of the Gall. For tho' a Horſe has no Gall-bladder, as Oxen, and moſt other large Animals, yet he has the *Porus Biliarius*, or Gall-pipe, very large, ſo as to ſupply the want of the other; and whoever becomes acquainted with his diſeaſes, will find that Horſes abound as much with Gall as any other Creature, and are frequently in danger, either when the paſſage of the Gall is obſtructed, or when the diſcharge of it happens to be too profuſe. And therefore if a Horſe had a Gall-bladder, ſuch as ſome other large Animals, it might be greatly expoſed to accidents by the violence and quickneſs of his motions. Which would either prove mortal, or render him altogether uſeleſs.

The *Porus Biliarius* or Gall-Pipe.

TAB. XIV. *p.109.*



The *Pancreas* or Sweat-bread.

The Sweet-bread is alſo a large Gland or Kernel, that lies acroſs the upper and back part of the Lower Belly under the Stomach, to which it ſerves for a ſoft Pillow to reſt on. Its refluent Blood is convey'd into the *Vena Porta*, and it has a paſſage into the firſt Gut, a little way below the Stomach, where the pancreatick Juice is emptied by its proper Duct. The uſe of the Gall and the Liquor ſeparated from the Sweet-bread, has already been taken notice of.

The Spleen.

The Spleen is placed under the Midriff, and above the left Kidney; it is ſomewhet oval, and flattiſh, and of a dark livid Colour; its texture is veſſicular, but its uſe is not yet perfectly known, tho' ſeveral Anatomiſts have publiſhed their conjectures about it.

The Kidneys, &c.

All that remains to be deſcribed in the Lower Belly, is the Kidneys, with the urinary and genital parts; wherein I ſhall but juſt mention the latter, the knowledge of which being but little required in the diſeaſes of Horſes.

The Kidneys are two in number, *viz.* the right and the left. The right lies under the Liver, and the left under the Spleen; ſo that it is ſeated a little higher than the other: they are both placed in the cavity of the Loins upon the two lowermoſt Ribs. Their uſe is to ſeparate the Urine, which is of great importance to the health and preſervation of Horſes, they being liable to many diſeaſes, which either take their origin from faulty Kidneys, or have at leaſt ſuch ſymptoms, as plainly ſhew the Kidneys to be more or leſs affected. The right

Kidney of a Horſe is ſomewhat triangular, the left oval, the upper part larger than the lower. Each Kidney has a ſmall cavity in the middle, called its *Pelvis* or Baſon, into which the Urine diſtils from the *Glandules* on all ſides. From the *Pelvis* of each deſcends a Pipe or Ureter, which conveys the Urine from the Kidneys to the Bladder. The Bladder is compoſed of three Coats, as the Stomach and Guts, the outer and innermoſt membranous, and the middle Coat muſcular, which are all extremely thin; only that the muſcular Coat grows thicker towards its Neck, where there is a Spincter that opens and ſhuts the paſſage at pleaſure. The Urine is convey'd from thence thro' the Yard, by a Pipe called the *Urethra*, which in a Horſe is pretty large. The *Glandulæ Renales*, by ſome called the *Capſulæ Atrabilares*, becauſe they contain a ſmall portion of a blackiſh Liquid, are ſmall, and ſeated above the Kidneys. Their uſe has never yet been determined, unleſs that they may have been of ſome benefit to the *Fœtus*, during the time of Geſtation, being then larger than the Kidneys, but rather diminiſh after the Birth.

The Genital Parts.

The Genital Parts of a Horſe are chiefly the Yard and Teſtes. The Yard or *Penis* begins with two ſeparate Bodies, that ariſe from the *Os Iſchium*, which unite under the *Pubis*, and are firmly connected by a Ligament; the fore part in a Horſe, which anſwers to the Glands, is broad and thin. Its whole Texture is full of little Cells or Caverns, and is therefore capable of being eaſily diſtended or depreſſed, by the ſudden influx or reflux of the Blood. Underneath its cavernous part is the *Urethra*, wherein are ſeveral Glands that diſcharge a *Mucus*, to prevent its being hurt by the acrimony or ſharpneſs of the Urine, which would be very dangerous to a Horſe, becauſe of the thickneſs and largeneſs of the Sheath, that would be greatly inflamed by any exceſſive heat in the urinary Paſſage; the Sheath being a looſe membranous Subſtance, derived from the Integuments of the Lower Belly.

The *Teſtes* or Stones are ſeated in a *Scrotum* or Purſe, which alſo takes its origin and growth from the external parts. Their Subſtance is glandular, their uſe being to prepare the Seed for procreation, which is carried by proper Veſſels into the *Veſſiculæ Seminales*, where it remains till the time of Coition, when it finds a Paſſage into the *Urethra*. They have four Coats or Covers, and have proper Veins and Arteries, the chief of which, called the Spermaticks, communicate with the Veins and Arteries of the Kidneys, *viz.* the Emulgents. Theſe Veſſels are convey'd within the outermoſt Coat of the Teſticles, called the *Tunica Vaginalis*, which incloſes them as in a Sheath, and proceeds from the *Peritoneum* above deſcrib'd, thro' Perforations in the form of a ring, between the Muſcles of the Lower Belly, and are in this manner contriv'd, to prevent Ruptures of the Inteſtines, which otherwiſe would frequently happen in the human Body, but are ſo rare in Horſes, by reaſon of their horizontal Poſition, that I have ſeen Burſtenneſs ſeveral times, tho' yet I never ſaw but one perfect Rupture into the *Scrotum*, which happened to a fine Arabian Stallion, in covering an unruly Mare, and but few on the Navel; and theſe were cauſed by violent accidents. As to the Genitals of a Mare: The Mare has her *Matrix Ovaria*, and other parts, that contribute to conception and nutrition of the *Fœtus*; which are much the ſame in moſt Quadrupeds, and have often been deſcrib'd by Anatomiſts, who have been curious in thoſe things that concern the Generation of Animals; and therefore I have the rather omitted them here, becauſe Mares are ſeldom ſubject to any accidents in thoſe parts, which may not be as well remedy'd by proper care, as by the uſe of Medicines.

CHAP. V.

Of the Parts contained in the Upper Cavity or Cheſt.

The *Thymus.*

IN the upper Cavity or Cheſt is contained the *Pleura*, *Mediaſtinum*, the Heart and Lungs, with a glandular Subſtance called the *Thymus*, from its reſemblance to a Leaf of Thyme. This lies acroſs the upper part of the Breaſt, and is like a ſoft pillow to the Lungs, eſpecially in Brutes, where it is conſiderably larger in proportion, than it is in Men, of which I ſhall take ſome notice hereafter.

The *Pleura.*

The *Pleura* is a very fine Membrane, that lines the whole inſide of the *Thorax* or Breaſt, the back-part of it ſerving like a duplicature, to cover

TAB. XV. *p. 113.*

Fig. I.

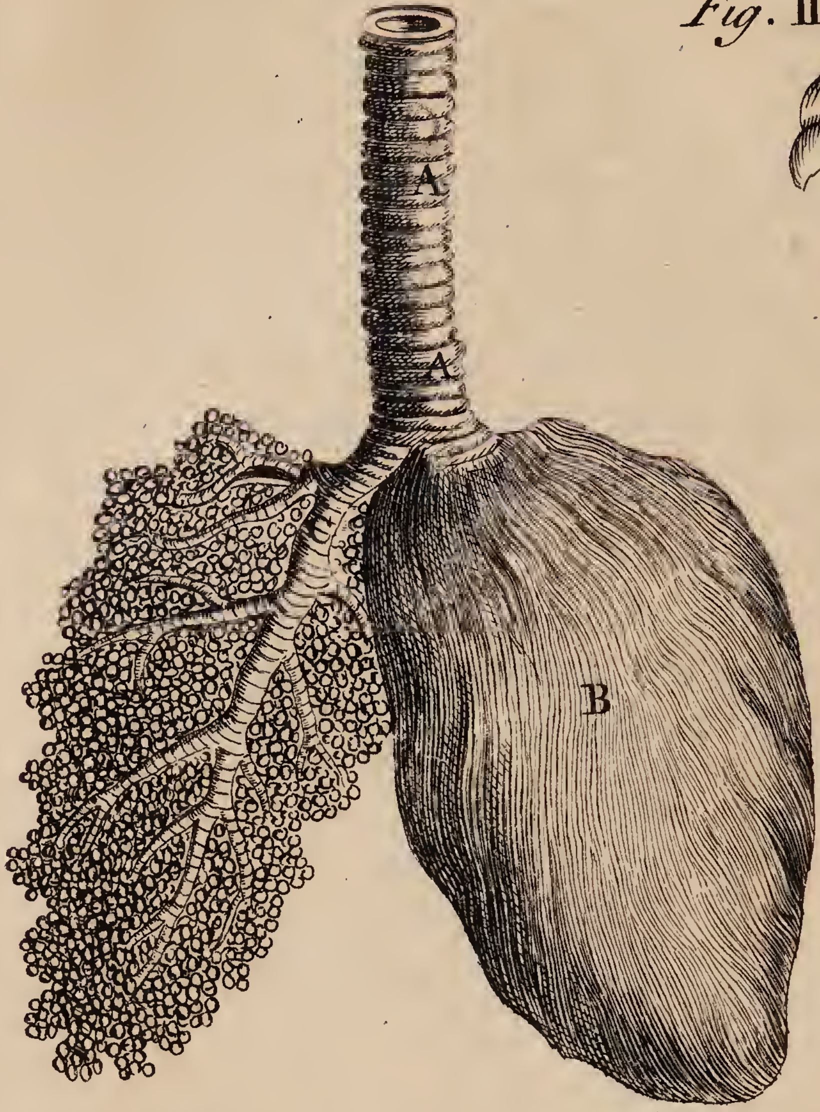


Fig. II.

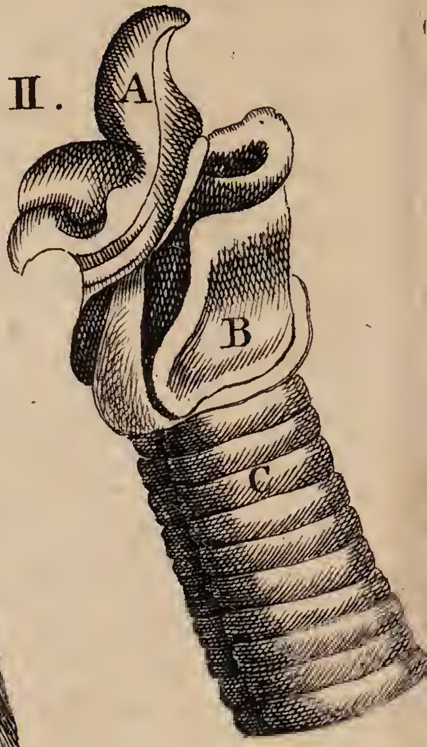


Fig. III.

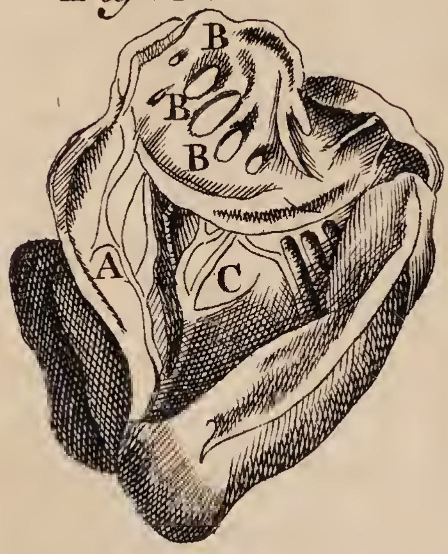
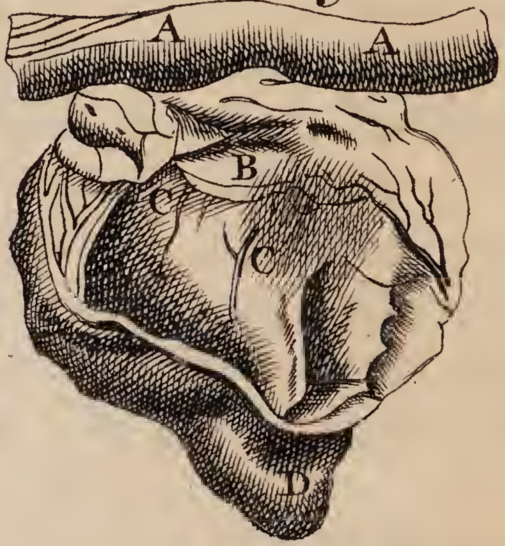


Fig. IV.



cover and incloſe the great Veſſels within it, that retain to the Heart and Lungs, as its exquiſite ſmoothneſs preſerves the Lungs from being hurt in their continual dilatations. This Membrane is always thought to be the Seat of the Pleuriſy in Men, tho' I cannot ſay I have ſeen it often much affected in a Horſe, even where the Lungs have been rotten or inflamed.

The *Mediaſtinum.*

The *Mediaſtinum* is a Membrane which divides the Cavity of the Breaſt like a Partition in two halves. In Men it is double, but in a Horſe ſeems undivided, or at leaſt is ſo cloſe that it cannot be eaſily ſeparated. Its chief uſe is to keep the two Lobes of the Lungs ſeparate and aſunder, eſpecially in lying on one ſide, a poſture in which Horſes often lay themſelves to ſleep.

The Lungs.

The Lungs or Lights (which is their vulgar name) conſiſt of two Lobes that fill up the greateſt part of the Cheſt, having the *Mediaſtinum* between them. In ſome quadrupeds each Lobe is ſubdivided into ſeveral ſmall Lobules, in the ſame manner as their Livers, but not ſo much in a Horſe, as in other animals that have a greater variety of motions; which perhaps may be the reaſon, why Horſes Lungs are ſo eaſily inflamed with hard Exerciſe, and with every great Cold. The *Aſpera Arteria*, or Windpipe, which begins with the Larynx behind the Root of the Tongue, deſcending along the fore-part of the Throat, is branched out into the Lungs. This Pipe is compoſed of circular Rings of Cartilage or Griſtle, which ſurround it about two thirds, the back part being a plain ſection, ſmooth and even, that it may not incommode the Gullet, which takes its courſe immediately behind it, and upon which it lies. Between the Rings is a fleſhy Membrane on which they are fixed, which alſo compoſes the back part towards the Gullet. This being muſcular, and the Rings cartilaginous, give it a ſpring of Action, whereby it contracts and dilates, ſo as to correſpond with all the motions of the Neck and Breaſt. At its entrance into the Cheſt, it is divided into two principal Branches, called its *Bronchia*, and is afterwards ſubdivided into innumerable other Branches, the extremities of which compoſe an infinite number of ſmall Cells or Air-bladders, which, with the Ramifications of the Veins, Arteries, Nerves and Lymphaticks, make up the whole maſs or ſubſtance of the Lungs. Theſe Cells or Veſſicles are always filled with Air, and diſtended in inſpiration, and are empty and ſunk in expiration, and receive from the Blood-veſſels a quantity of Lymph or perſpirable Matter, which not only keeps the Lungs from drying, but makes a large and neceſſary diſcharge from the Blood, as we may eaſily perceive from the Breath of all Creatures in froſty weather, or when we ourſelves breathe upon a Glaſs, or any poliſhed Metal or Stone. The Lungs may juſtly be reckoned among the principal Organs of the Body, if not the chief of all, as they are ſo well adapted in every reſpect to receive the Air, without which we cannot ſupport Life one moment, and are no leſs fitted to purify the Blood by their continual action, and by making ſuch ample diſcharges, as are neceſſary for the preſervation of Health, as well as of Life. Beſides that they are the chief Inſtruments of the Voice in all Creatures, and by drawing in the *Effluvia* thro' the Noſe, contribute greatly to the ſenſe of Smelling.

The *Pericardium*, or Heart Purſe.

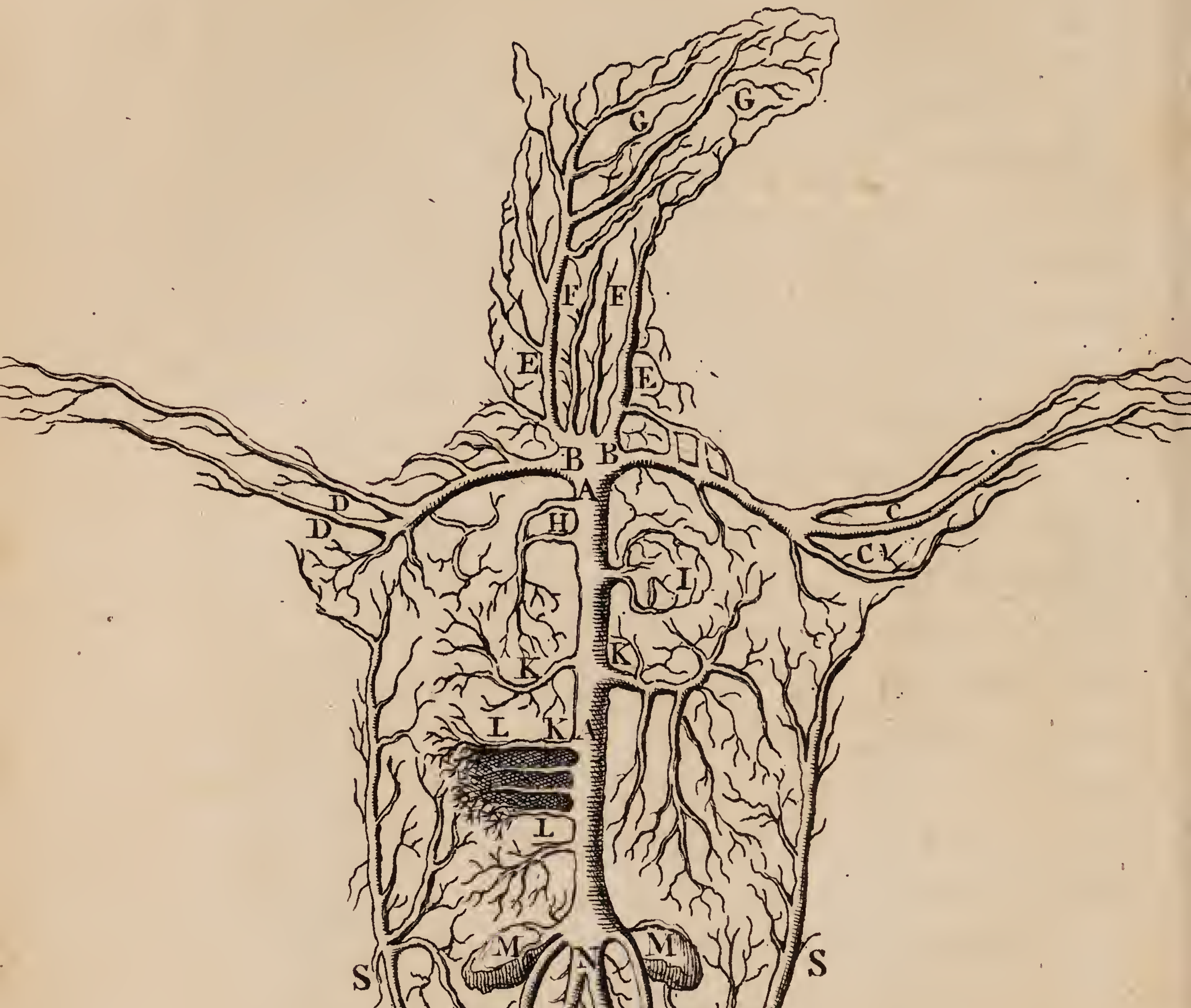
The *Pericardium* is a very ſtrong membranous ſubſtance, which incloſes the Heart like a Purſe. It is not only of uſe to defend it from the frictions of the Lungs, but contains a moiſture which keeps it cool, and renders its motions glib and eaſy.

The Heart.

The Heart is a Muſcle of a Conic Figure, *viz.* broad at bottom and narrow at top. In a Horſe it is not near ſo large as in a Bullock, nor proportionably ſo broad towards its Baſis. Its Fibres are very compact and laid cloſe together, having a twiſted or ſpiral direction, eſpecially towards its Top, where it ſomewhat reſembles the contortion of a Snail's Shell. It is fixed to ſome of the *Vertebræ* of the *Thorax*, or Rack-bones of the Breaſt, by the large Veſſels that go to and from it. Its point inclines a little downwards towards the left ſide, where it is received into a depreſſion of the left Lobe of the Lungs, which perhaps may be form'd in the *Fœtus* by the poſition of the Heart, before the Lungs have been filled with Air. The Heart is nouriſhed and maintained by its own proper Veſſels called the *Coronariæ*, in regard they ſurround its whole ſubſtance like a crown or garland. It has a middle Partition, which divides it internally into two Ventricles; the left is ſmaller than the right, and its ſides much thicker, its office being to drive the Blood to the moſt diſtant parts thro' the whole body, whereas the right Ventricle detaches it only thro' the Lungs. Its inſide has ſeveral ſmall Chords or Compages of Fibres, called *Columnæ Carneæ*, which reſemble the bundles of columns which we perceive in Gothick Buildings, and help to comminute, and break the groſſer parts of the Blood, in the frequent contractions of the Heart. The contraction and dilatation of the Heart, is called its Syſtole and Diaſtole. The firſt when the *Vertex* or top of the Heart is drawn down to its baſis, to ſend the Blood into all parts, and the latter, when it opens and dilates itſelf to receive the refluent Blood. The Heart has its Auricles, which are ſo called becauſe they reſemble two Ears, and are ſeated at its baſis, one on each ſide, to receive the Blood at its entrance into the Heart, the right from the aſcending and deſcending Trunks of the *Cava*, and the left from the pulmonary Veins, by which it enters in due portions, and ſo as it may not ruſh in with too much violence, and in too great quantity, to interrupt the regular action of the Heart; for when the Auricles are full the Heart is empty, and when the Heart is full the Auricles are empty. The Auricles, in their mechaniſm and ſtructure, ſomewhat reſemble that of the Heart, only that they are chiefly membranous, whereas the Heart is altogether fleſhy; for if it was tendinous in any part, as moſt other Muſcles are, it would be altogether unfit for its office. When the two trunks of the *Cava* open into the right Auricle, there is a little eminence or riſing, which prevents the Blood of the aſcending and deſcending Trunks from ruſhing together, and cauſes it to ſlip more gently into the Ventricle, and the coronary Veins likewiſe opening into its entrance, with the refluent Blood from the Heart, may probably render this the more neceſſary. The large Veſſels which empty the Blood into the Heart, and thoſe that receive the Blood from it, have each of them *Valves*, whereby the Blood is forwarded in its Paſſage, but cannot return back the ſame way it came, *viz.* the *Vena Cava* which enters into the right Ventricle, has three, called *Tricuſpides*, being like ſo many points of a ſpear or launce. Theſe point inwards, ſo as to open a free paſſage for the Blood, into the right Ventricle of the Heart. The Pulmonary Artery, which receives the Blood from the ſame Ventricle into the Lungs, has alſo three *Valves*, called *Sigmoidiæ*, from their reſemblance to the Greek Letter *Sigma* Σ. Theſe look from within outwards, by which they hinder the Blood returning back again into the Heart. The pulmonary Vein has two *Valves* called *Mitrales*; theſe have the ſame office as thoſe of the *Cava* above deſcribed, being to hinder the Blood returning back again into the Lungs, and the *Valves* of the *Aorta* or great Artery, called *Semilunares*, have the ſame office as thoſe of the pulmonary Artery, *viz.* to prevent the Blood which by it is detached into all the other parts of the Body, from returning back again into the Heart.

The uſe of the Heart is ſufficiently deducible from what has been already ſaid in its deſcription, the Heart being the vital Fountain which receives the Blood from all the rivulets of the body, and diſpenſes it back again thro' its proper Channels, for the ſupport and nouriſhment of every part; and for that end, its ſtructure is very peculiar and different from all other Muſcles, eſpecially thoſe that move particular parts, for as theſe are partly fleſhy and partly tendinous, or have their fleſhy Fibres end in Tendons of a cloſer contexture. the Heart, on the other hand, is altogether fleſhy, and made up of Fibres ſo exquiſitely fine, and ſo cloſely compacted together, that it is, by that means, indowed with all the force that is neceſſary for its function, and its baſis is the moſt compact of all its other parts, where probably its Fibres have both their origins and inſertions in the membranous Coats of the large Blood-Veſſels to which it adheres: riſing ſpirally upwards, and turning again downwards archways, in the like direction over the Ventricles, which ſeems beſt to correſpond with its dilatation and contraction. But if we inquire by what means the Heart comes to be endowed with ſuch a capacity of action, wherein we ourſelves have not the leaſt ſhare, we muſt confeſs our Ignorance, and aſcribe this wonderful piece of mechaniſm to the great Author of nature. In other actions we have ſomething voluntary, *viz.* we have power to move a Leg or Arm, or any other Member; but in the action of the Heart, we and all other animals are altogether paſſive.

TAB. XVI. *p. 119.*



paſſive. We know indeed, that the Nerves, which are plentifully beſtowed on the Heart, have a great ſhare in its continual motion, which is diſcoverable by experiments made in tying the trunk of any Nerve, that diſpenſes its branches upon a Muſcle, at what time the Muſcle will become paralytick, and ceaſe to act until that impediment is removed; but ſtill the Nerves are only inſtrumental, and therefore all that we know of this matter, muſt be reſolved into the ſame original cauſe.

I have ſeen the Hearts of Horſes frequently opened; ſometimes there happens, as in the human body, collections of matter within the *Pericardium*. I have ſeen Polipuſſes in the great Veſſels, and ſometimes a maſs of ſlippery Fat, eſpecially within the left Ventricle, of Horſes that have dy'd ſuddenly, and ſometimes the Heart itſelf preternaturally large.

CHAP. VI.

Of the Blood-Veſſels, *viz.* The Veins and Arteries, with their diſtribution into all Parts of the Body of a HORSE.

IT may be eaſily underſtood, from what has been already obſerved in the deſcription of the Heart and Lungs, that the aſcending and deſcending Trunks of the *Vena Cava*, the aſcending and deſcending Trunks of the *Aorta*, with the pulmonary Vein and Artery, the *Vena Porta* of the Liver, and ſome few others, are the principal and moſt remarkable of all the

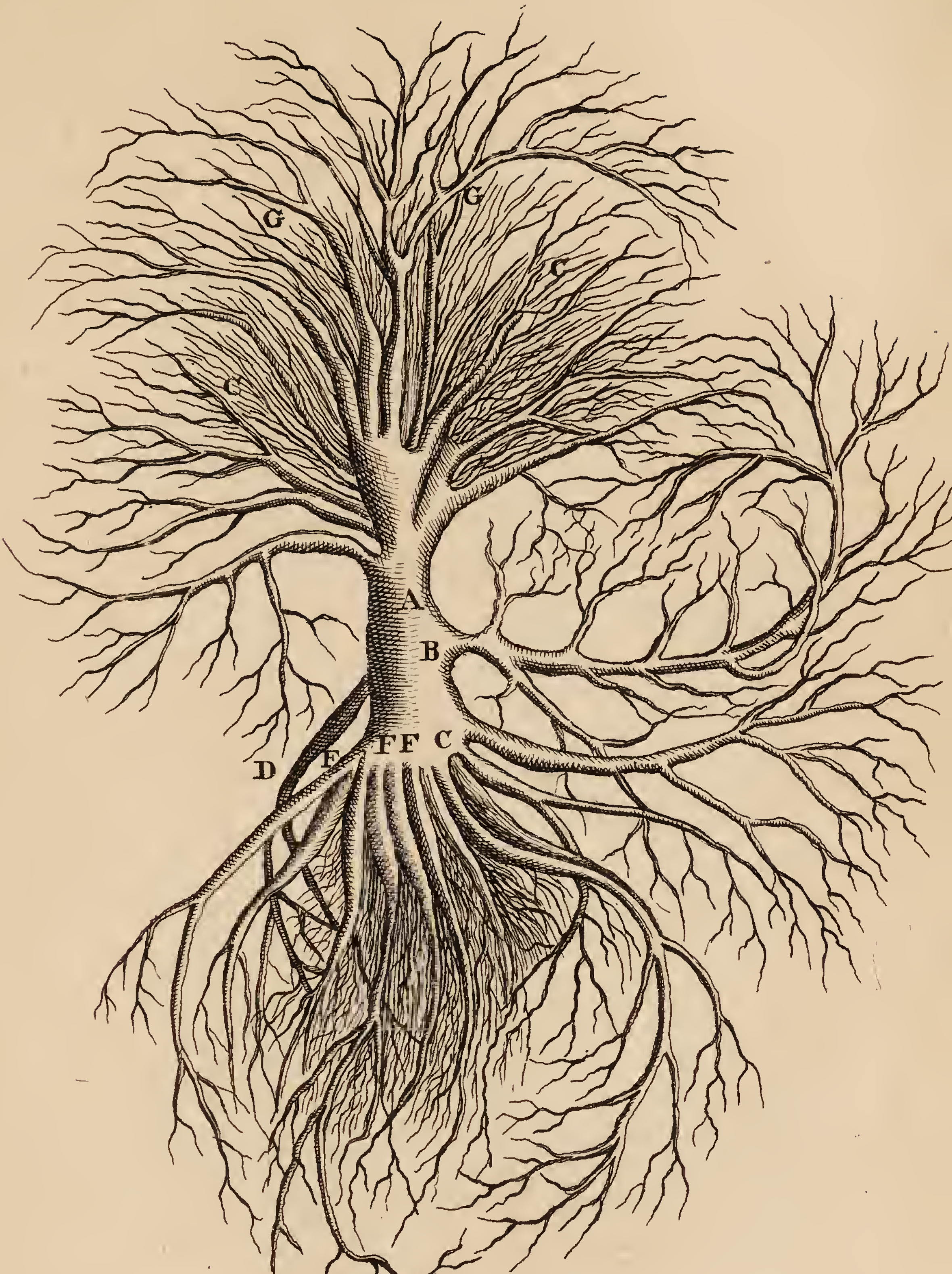
Blood-veſſels; that the Arteries carry the Blood into all parts from the Heart, and that it returns back again in the Veins, when it has taken its circuit and progreſs through the Body; therefore it remains only to ſhew in what manner both the one and the other are diſtributed, ſo as to perform that important office, whereby all parts of the animal Body have their vital ſupplies.

The diſtribution of the Veins and Arteries.

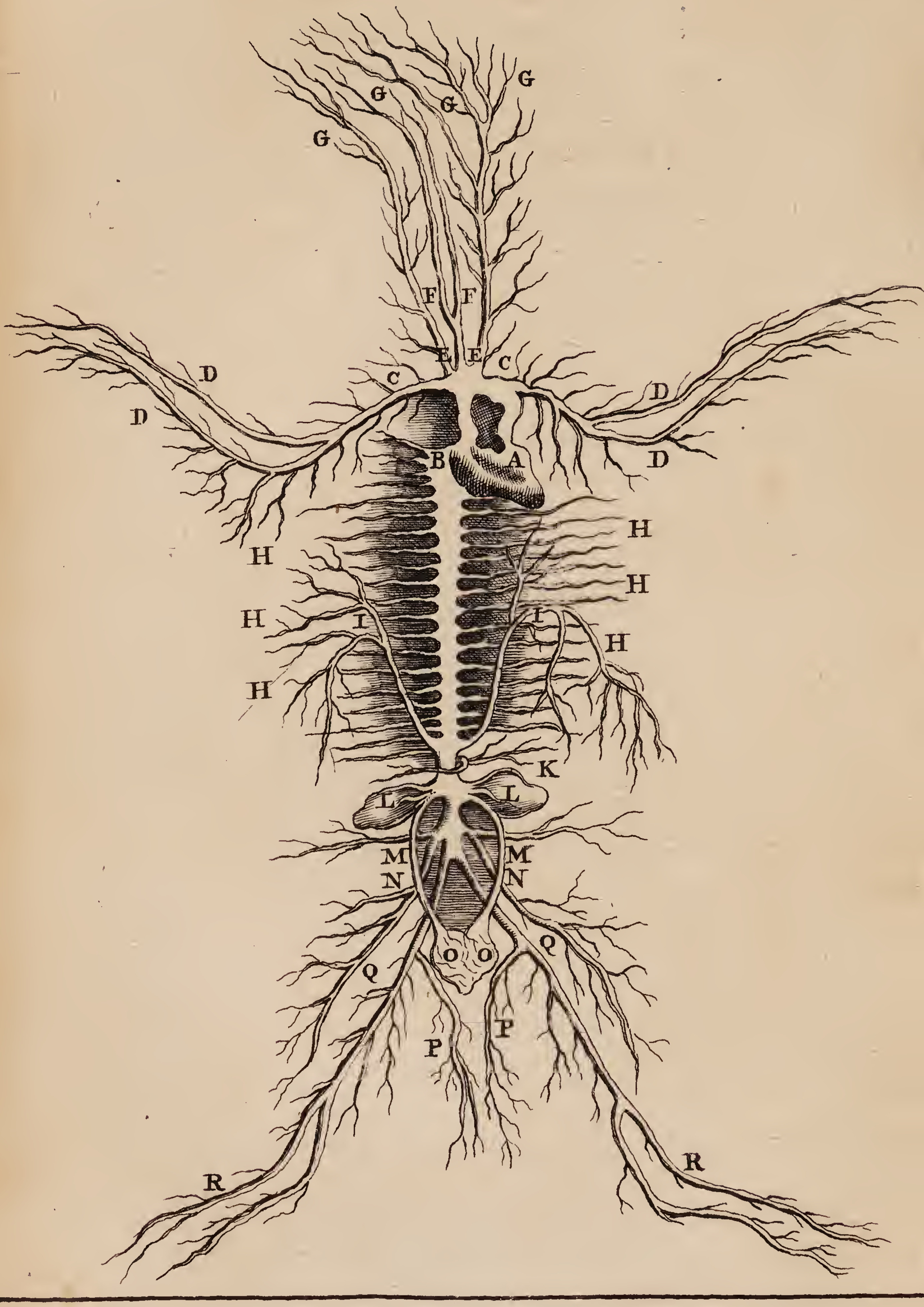
The aſcending and deſcending Trunks of the *Vena Cava*, meet ſo as to open into the right Auricle of the Heart. The Auricle receives all the Blood from both the above-mentioned Trunks, which fills the right Ventricle of the Heart in its Diaſtole, and by its Syſtole empties the ſame Blood into the pulmonary Artery, which ſupplies the whole ſubſtance of the Lungs by innumerable branches: The ſmall capillary branches of the pulmonary Vein, take up the Blood from the capillary branches of the Artery, and theſe convey all the refluent Blood into one pretty large Trunk, which opens into the left Auricle; and this Auricle, by its Syſtole or contraction, diſgorges the Blood into the left Ventricle, which thruſts it out into the *Aorta*. This firſt of all ſends out two ſmall branches to the Heart, *viz.* The *Coronariæ* above deſcribed, and then riſing a little archways, perhaps to leſſen the *Impetus* or force of the Blood, as it immediately ruſhes from the Heart, it is divided into its two principal Trunks, *viz.* the aſcending and deſcending.

The aſcending Trunk of the *Aorta*, climbs up by the Windpipe to the upper part of the *Thorax*,

TAB. XVII. *p. 120.*



TAB. XVIII. *p. 121.*



Thorax, where it ſends off the ſubclavian Arteries in two branches, which run under the Channel-bones on each ſide. Theſe ſend off other branches, both from their upper and under ſides; from their upper ſides the cervical Arteries, which are partly ſpent on the Muſcles of the Neck and Breaſt, and partly on the Thyroid Glands near the Windpipe. From the lower ſide of the ſubclavian Arteries proceed the ſuperior Intercoſtals, which paſſing through the Cheſt, ſend forth ſeveral branches to the Fore-Legs. Near where the Subclavians go off from the *Aorta*, ariſe two other principal branches, called the Carotid Arteries, which aſcend upwards towards the Head, where they form the *Rete Mirabile*, and *Plexus Choroides*, upon the ſurface of the Brain, which are plainly to be ſeen, and help to ſerve the Brain and its Membranes. The Carotids alſo detach ſeveral branches to the Windpipe, the Larynx, and ſome to the Tongue, and lower Jaw, and others to the Scalp, and external parts of the Head. By theſe four principal branches, *viz*. the Subclavian and Carotids, the whole Head and Neck, as alſo the external parts of the Cheſt and Fore-Legs, are ſupplied with Blood.

The deſcending Trunk of the *Aorta*, as it approaches the Midriff, ſends forth the inferior Intercoſtals that go to the Ribs, with the bronchial Artery, that accompanies the branches of the Windpipe in the Lungs; and when it has juſt paſſed thro' the Midriff it detaches other branches, *viz*. the phrenick Arteries, which are diſperſed in the Midriff and *Mediaſtinum.* From the Midriff it reaches downwards as far as the laſt *Vertebra* of the Loins, but by the way ſends off ſeveral branches to the Stomach and other Inteſtines, as the Celiack, Splenick, and upper Meſenterick, and below theſe the emulgent Arteries, one on each ſide, which go to the Kidneys; and underneath theſe ariſe alſo from the main Trunk the Spermaticks, which go to the Genitals; and laſt of all, the lower Meſenterick, which with the upper Meſenterick, ſupply the whole Meſentery.

After this the *Aorta* or great Artery, reaching the top of the *Os Sacrum*, is divided into two branches, one on each ſide, called the Iliacks, and theſe are again branch'd out into the external and internal. From the latter proceed thoſe called the *Muſculæ*, which are beſtowed on the Pſoas Muſcle, and other Muſcles of the Buttocks, as alſo the Hypogaſtricks that run to the ſtreight Gut, the Matrix, the Bladder, *Proſtates*, and Yard, and to all the parts contained within the *Pelvis.* From the external Iliacks ariſe the Epigraſticks, which turning forwards, creep along the rim of the Belly, where they meet the Mamillary above deſcribed. The next are the *Pudenda*, which go to the privities of both ſexes, and thereby communicate with the Hypograſticks. Afterwards the Iliacks go to the Thighs, and as they paſs downwards are called the Crural Arteries, ſupplying the Hind-Legs and Feet with many conſiderable branches.

This being the general diſtribution of the Arteries into the ſeveral parts of the Body, it is to be obſerved, that all the branches are divided and ſubdivided into ſmaller branches, like the boughs of a Tree, or the *Stamina* of Plants, by which all the parts of the animal body is overſpread with moſt minute capillary Arteries, and are ſo combin'd one with another, that when one or more ſmall Arteries happen to be obſtructed, the Blood that is by ſuch obſtruction hindered in its paſſage, is received and taken up into other communicating branches; by which its motion is preſerved, and the parts not deprived of their ſupport and nouriſhment. The ſame œconomy is obſervable in the Veins, whoſe capillary Veſſels take their beginning like ſo many drills or rivulets, which empty themſelves into the larger branches, and theſe at laſt into the aſcending and deſcending Trunks of the *Cava*, as into a main river; ſo that when the capillary Veins are divided or obſtructed, the communicating branches carry off the Blood, ſo as to prevent any dangerous ſtagnation, which by any other mechaniſm might eaſily happen from very ſlight accidents.

The Mechaniſm and Structure of the Veins and Arteries.

But as it is the peculiar province of the Arteries to convey the Blood from the Heart, and diſtribute it into all parts of the Body, ſo they are perfectly fitted for that purpoſe (by their ſtructure. The Arteries have three Coats, and the Veins the ſame number (wherein they both agree with moſt other membranous Tubes;) but as the impulſe of the Blood from the Heart into the Arteries, requires a conſiderable ſtrength in them more than in the Veins, therefore their Coats are much thicker; the reaſon of which will appear by conſidering the office of the Veins, for the capillary Veins receive the Blood where the arterial impulſe is but ſmall, and its motion in the Arteries languid; and when the Blood upon its return has entered the Veins, its motion cannot much increaſe, as it is received from Veſſels that are ſmall, and paſſes into others that are larger; and indeed it could hardly move at all in ſome places, had not all things been wiſely contrived for that purpoſe; and therefore thoſe who have ſeen diſſections muſt have obſerved, that wherever there is any conſiderable branch of an aſcending Vein, there is generally a branch of an Artery underneath it or very near it, which by its continual pulſation gives ſome help to the motion of the venal Blood, and ſometimes, eſpecially on the Limbs, we may obſerve two Branches of Veins accompany a large Artery, one on each ſide; and if it happens the ſame in many places where the Veſſels are ſmall, which is no ways improbable, it muſt be the means greatly to facilitate the return of the Blood, not only from the aſſiſtance it has from the pulſations of the Arteries, but as it is carried off in a greater number of Canals, beſides the muſcular action which accelerates the motion of the Blood in both, but eſpecially in the Veins. But further, the Veins, as in the Chyle-Veſſels, and *Thoracick Duct* above deſcribed, have *Valves* placed at convenient diſtances, which all open inwards, for the progreſs of the Blood towards the Heart; ſo that being forwarded in its paſſage that way, cannot return back again; and it may alſo be obſerved, that theſe *Valves* are the moſt numerous where they are the moſt wanted, as in the Limbs, and other places where the venal Blood aſcends upwards, being fewer in number, where the courſe of the Blood in the Veins diverts ſideways, and few or none where it is directly downwards. But I ſhall now go on to deſcribe the diſtribution of the Veins, the larger of which very near agree and correſpond with that of the Arteries.

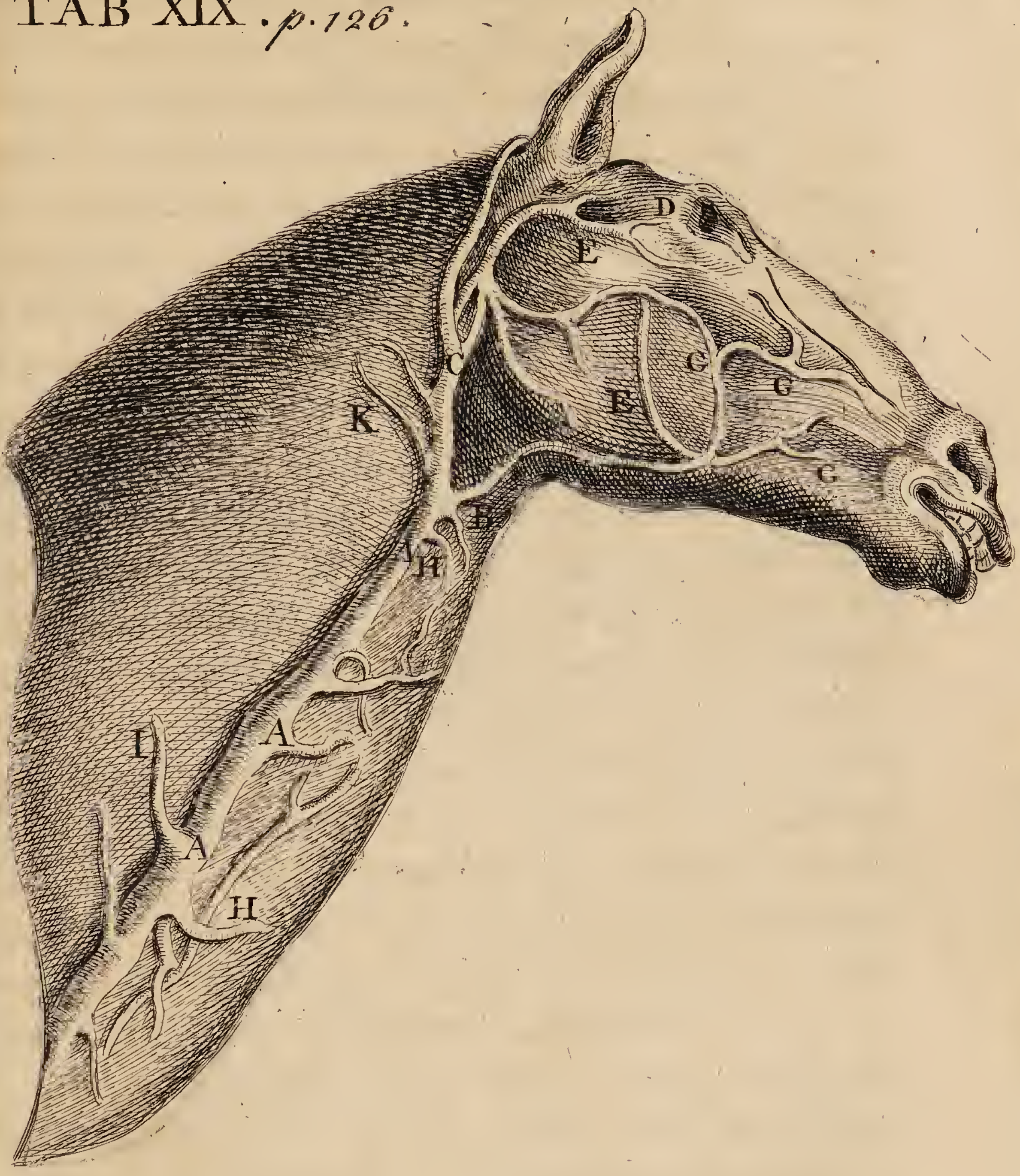
The courſe of Circulation.

As the *Aorta* or great Artery receives the Blood from the Heart, and diſperſes it into all parts of the Body, ſo the *Cava*, as has been obſerv'd, like a main river, receives into it the Blood from all parts of the Body, proceeding firſt from Veſſels exquiſitely ſmall and imperceptible, and afterwards uniting in larger branches, empty themſelves into its aſcending and deſcending Trunks, at proper and convenient diſtances. The ſuperior or deſcending *Cava*, receives firſt the coronary Vein from the Heart, near the place where it opens into the Auricle, and before it pierces the *Pericardium* or Purſe of the Heart, it receives the *Vena ſine pari*, which is made by the union of the Veins of the Ribs, likewiſe the Bronchial Veins that accompany the *Bronchia* in the Lungs.

The next are the Subclavian and Jugular Veins, which are pretty large, and anſwer to the Subclavian, Cervical and Jugular Arteries, and are the next of any note, that open into the deſcending *Cava*. Theſe are divided into the external and internal; from the internal is return'd the Blood from the Ventricles of the Brain, and into them alſo, open all the branches of Veins that lye among the bars of the Mouth, which are often ſtruck with a Cornet or Fleam, when Horſes happen to be ſeiz'd with the Gripes, or other ſudden diſorders; alſo the *Ranulares* or Veins under the Tongue, and many other Branches and Veins which communicate with thoſe of the Brain. The external Jugulars are thoſe large Veins which run the length of the whole Neck, one on each ſide near the Gullet, and are conſtantly opened in all caſes that require bleeding; theſe being the largeſt and ſafeſt in the Body of a Horſe. Theſe receive and carry back that portion of Blood, which comes from all the external parts of the Head and Face, *viz.* from the Eye-Veins, the Temple-Veins, and thoſe of the Noſe and Lips.

The Subclavian Veins, *viz.* the two large Veins which paſs along by the ſubclavian Arteries under the Channel-bones, not only receive a great part of the Blood which enters the Cheſt, but likewiſe have all thoſe Veins open into them, which run along the outward part of the Breaſt, Fore-legs, and Feet. The Plate Veins, which open into the Subclavian, runs along the inſide of the Fore-leg towards the Knee, anſwering thoſe on a Man's Arm, and are frequently opened for lameneſs in the Breaſt or Shoulders; but I have often had Horſes bled there on other accounts, with good ſucceſs. Below this are the Shank-Veins and Shakle-Veins, which communicate with the Plate-Vein. The

TAB XIX. *p.126.*



Shank-Veins are thoſe that run in the hollow on each ſide of the Back-Sinew, between it and the Shank; and the Shakle-Vein is that branch which runs acroſs the Back-Sinew, and communicates with the Shank-Veins on each ſide, under the place where a Horſe is ſhakled. But this Vein is ſo very ſmall, that it is ſcarce ever to be ſeen or felt, but when a Horſe happens to be extremely hot; and then we may perceive one or more branches run acroſs the Sinew. I have ſometimes known pretty large Varixes in thoſe parts, by which the Shakle-Vein has appeared very plain and viſible at all times, and been the cauſe of great weakneſs and debility in the Limb, till it has been removed by manual operation. Theſe, and the Shank-Veins, communicate with thoſe of the Coronet and Toe. Thoſe of the Toe are often opened for Infirmities of the Feet, and the Veins about the Coronet are frequently cut aſunder in the cure of Quittors, and other accidents in thoſe parts, and ſometimes with leſs danger to the Horſe than one could well imagine.

The aſcending *Cava*, which runs along by the Spines of the Back, and carries the Blood from all the lower parts upwards to the Heart, receives firſt thoſe branches of Veins, which return the Blood from moſt parts of the Lower Belly, *viz.* the *Meſenteriæ* from the Meſentery, the *Portæ* from the Liver, the Emulgents from the Kidneys, the Spermatic Veins from the parts of Generation, and where it is divided, as the deſcending *Aorta* into the internal and external Iliacks. The firſt receives branches from the Hypogaſtricks, by which the Blood is returned from the Matrix, Bladder, and ſtreight Gut, and into the latter, *viz.* the external Iliacks open into the Epigraſticks, with branches from the *Peritoneum*, and external parts of the Lower Belly, which in the Farriers terms are denominated by different names, as the Kidney-Veins near the Loins, the Flank and Spur-Veins, which are often ſtruck and wounded by the Spurs, the Liver-Veins on the ſide of the Lower-Belly, and are ſometimes opened from a ſuſpicion of diſeaſes in the Bowels, and alſo that of the Rump, called the Tail-Vein, which the Farriers frequently open, or elſe ſcarify the Tail in the Staggers, and other diſorders that affect the Head. The Thigh-Veins, and the Crural-Veins, alſo enter into the external Iliacks and Epigraſticks, as the Shank-Veins in the Fore-Legs communicate with the Subclavians. The Thigh-Vein runs along the inſide of the Thigh, and is often opened in Fevers, Lameneſs of the Hips, and diſorders of the Loins and Kidneys. The Crural Veins are thoſe on the lower Limbs, on each ſide the Inſtep, and anſwer to the Shank-Veins, in the Fore-Legs above deſcribed.

CHAP. VII.

Of the Lymphatick Veſſels.

THE Lymphatick Veſſels ariſe from all parts of the Body at the extremities of the Arteries, in the ſame manner as the Veins, but more plentifully from the Glands than any where elſe. They are clear pellucid Tubes, of a cylindrical Figure, and as they appear to the Eye, ſeem only to conſiſt of one exquiſitely thin Coat. They often take their courſe thro' Glands; but when it is ſo, there is generally another branch, that either paſſes over or along the ſide of that Gland, which, as Mr. *Cheſelden* well obſerves, may prevent their Fluid from being obſtructed, which would readily happen in caſe theſe Glands through which they paſs ſhould become diſeaſed. Thoſe of the Lower Belly, enter partly into the *Venæ Lacteæ, Secundi Generis*, which riſe from the ſmall Guts, and partly into the receptacle of the Chyle, and thoſe of the Cheſt into the *Thoracick Duct*, and Subclavian Veins; many of them alſo open into other large Veins in divers parts of the Body, from whence we may eaſily gather, that the uſe of the Lymph is to dilute the Blood, for the Lymph being a very fine pure Water, muſt render it more thin and fluid, and conſequently more fit to paſs through the minuteſt Veſſels. But the *Lymphæ Ducts* are themſelves ſo extremely thin, as expoſes them to frequent ruptures, eſpecially in Horſes, whoſe great weight join'd with their labour, and many other concurring cauſes, eaſily produce ſuch accidents. I have ſeen in Horſes, their whole Cheſt filled with water, ſometimes the Cavity of the Lower Belly only, and ſometimes both Cheſt and Lower Belly, eſpecially when the diſtemper has been of any continuance; and therefore in all violent and viſible oppreſſions, which generally pre-

The uſe of the *Lympha.*

precede ſuch diſtempers, I have found the greateſt ſucceſs from large evacuations, particularly ſuch as promote Urine plentifully. The *Lymphæ Ducts* are branched out in the ſame manner as the Veins, in many and various ramifications, and therefore have valves at convenient diſtances, and where they are the moſt neceſſary to aſſiſt the motion of the Lymph, and prevent its regreſs; and perhaps the pulſation of the Arteries, and the muſcular motion, may alſo contribute ſomewhat towards the ſame end.

The diſtribution of the Lymphatick Veſſels.

CHAP. VIII.

Of the Glands or Kernels.

HORSES being as much ſubject to diſeaſes of the Glands as moſt other animals, and a Gland being the ſame thing that we commonly call a Kernel in brute Creatures, it may not be improper to give thoſe, eſpecially who are unlearned, ſome notion of their different kinds, and alſo of their mechaniſm and uſe, wherein I ſhall chiefly follow Mr. *Cheſelden*, who has given a more rational and clear account of the nature and ſtructure of the Glands, than ſome of thoſe who have written elaborate diſcourſes on the Secretions.

Mr. *Cheſelden*'s Account of the Glands.

A Gland or Kernel, according to this author, is chiefly compoſed of a convolution of one or more Arteries of a conſiderable length, from whoſe ſides ariſe vaſt numbers of excretory ducts, in the ſame manner as the Lacteals ariſe from the Guts to receive the Chyle. The ſame author is of opinion, that altho' the larger Secretions are made by viſible Glands, (that is, ſuch as we can in a natural ſtate, ſee plainly with the naked eye,) yet that unconvolved Arteries may have excretory Ducts, by which he imagines Secretions are made from all the Membranes that line Cavities. That numbers of Lymphatick Veſſels alſo ariſe from theſe Arteries, whoſe uſe ſeems to be, to take off the thinneſt part of the Blood, from ſuch places where a thick Fluid is to be ſeparated, being always found in greateſt plenty, in ſuch Glands that ſeparate the thickeſt Fluids, as in the Liver, and Teſticles; and obſerves, that where the thickeſt Secretions are made, the velocity of the Blood is the leaſt, as if it was contrived on purpoſe to give thoſe ſeemingly tenacrous parts, more time to ſeparate from the Blood: that the Arteries that compoſe different Glands, are convolved in different manners; but thinks it will be difficult to diſcover, whether their different Secretions depend upon their different convolutions. The ſame author further takes notice, that the Excretory Ducts ariſe from the Arteries, and unite in their progreſs, as the roots of trees, plants, fruits, and even different minerals, in their growing, often derive their diſtinct, proper, nutritious Juices from the ſame kind of earth; ſo the Excretory Ducts in different Glands, ſeparate from the ſame maſs of Blood their different Juices, tho' we have no certainty what theſe different Secretions depend upon, whether upon the ſtructure of the parts, or on different attractions;

but concludes in favour of the latter, *viz.* that from the great ſimplicity and uniformity uſually ſeen in nature's works, he is inclined to think, that the different ſecretions ariſe from the different attractions, ſeeing that in plants and minerals there ſeems to be no other way.

Thus far Mr. *Cheſelden*, in his ingenious and accurate account of the Glands, the underſtanding of which is of no ſmall conſequence to the knowledge of diſeaſes; for how far theſe are diſturbed in their ſeveral offices, ſo far the animal body muſt ſuffer; and this in proportion as their ſecretions are of more or leſs moment to the preſervation of life and health, or according as their ſituation is more or leſs dangerous, and puts them beyond the reach of proper applications. And it may be obſerved, as all acute diſeaſes generally proceed from an inordinate motion of the Blood, and this oftentimes from an obſtructed perſpiration; ſo all chronical diſeaſes, for the moſt part, ariſe from a diſtemperature in the Glands.

Glands of various Kinds.

The Glands are of various kinds, and are more or leſs to be found in almoſt all parts of the body, and in ſuch manner as they may beſt perform their various functions. Thus even all the Membranes that line cavities, are ſtudded with Glands, or have veſſels that diſcharge a Mucus, to preſerve them from adhering to the parts contained within them; and thoſe parts that are expoſed to the air, as the Noſe, Ears, Mouth, and Head of the Windpipe, have alſo their Membranes beſet with Glands, to preſerve them from turning too dry, and from other injuries to which the external air would expoſe them. The Skin is alſo thought to be full of very minute ſmall Glands, which ſeparate the Sweat, and are called the Miliary Glands, from their reſemblance to millet-ſeed. The Udder in Mares is alſo glandulous, for the preparation of the milk. The Liver, as has been obſerved, is the largeſt Gland in the bodies of all animals, for the ſeparation of the Gall or Bile; the uſe of which has been already mentioned in its deſcription. The *Pancreas*, or Sweetbread, is alſo glandulous, and likewiſe prepares a juice for the help of digeſtion; and the Kidneys are of great moment for the ſeparation of the Urine. There are alſo the ſalivary Glands that ſeparate the juices in the Mouth, which are ſqueezed into it by the motion of the lower Jaw, and ſerves to moiſten the food, and render it not only fit to be ſwallowed, but the more eaſy of digeſtion. Of theſe, the Parotid Glands are the largeſt, and are ſituated behind the lower Jaw, under the Ears; their excretory Ducts paſſing through the *Buccinator* Muſcles into the Mouth. The next are the inferior maxillary Glands, ſituated at the under ſide of the lower Jaw, having their excretory Ducts entering the Mouth on both ſides under the Tongue, and near the Grinding-Teeth. Another ſmall Gland, called *Sublingualis*, lies more inward, under the root of the Tongue, and is the chief ſeat of the Strangles in young Horſes. Theſe, with the Tonſils near the *Uvula*, are the chief ſalivary Glands. The other Glands within the Mouth

Their Uſe.

The *Sublingualis* the Seat of the Strangles.

being very ſmall, and chiefly diſperſed upon the inner Membranes, ſerve to keep the Mouth ſufficiently moiſt. In the human body, numbers of theſe ſmall Glands may be felt at all times on the inſide of the Lips, which preſerve them from growing dry by much ſpeaking; but in Horſes, that have no need of ſpeech, there are ſcarce any to be felt, except a very few, and theſe exceeding ſmall, at the two Angles or Corners of the Mouth. For the foam that falls from a Horſe's Mouth, when he champs upon his Bit, is chiefly derived from the Salivary Glands.

The *Lymphatick* Glands.

As to the Lymphatick Glands, they are ſituated ſome few in the Head, ſome in the Thorax or Cheſt, and ſome in the Lower Belly, others in the Interſtices of the Muſcles, or accompany the large Blood-veſſels. And thoſe under the Armpits, and in the Groins, are alſo reckoned among the Lymphatick Glands; but in Horſes, are much ſmaller in proportion than in Men, tho' they ſeem to run a greater length; and perhaps if they were larger, and more prominent, might eaſily be hurt, or too much preſſed by the violent motions of a Horſe.

Mr. *Cheſelden* reckons the *Glandula Pinealis*, which *Des Cartes* very ridiculouſly took to be the ſeat of the ſoul, only a Gland of this kind, having often ſeen large *Lymphæ Ducts* running into it from the *Plexus Choroides*, and has alſo obſerved a large Lymphatick enter into the *Glandula Pituitaria*, which lyes in the baſis of the Brain; tho' this has been judg'd by moſt anatomiſts to be only an excrementitious Gland.

Several Lymphatick Glands are alſo to be met with in the Neck, accompanying the Carotid Arteries, and internal jugular Veins. The *Glandulæ Thyroideæ*, which are ſituated immediately below the Thyroid Cartilage, are alſo reckoned of the Lymphatick kind, as alſo the *Thymus* immediately within the *Thorax*. The *Thymus* is much larger in children than in grown perſons, but is not ſo in brutes; and the abovementioned author has obſerved, that in men as the *Thymus* grows leſs, the Thyroid Glands grow larger, and that the *Thymus* and *Glandulæ Thyroides*, both belong to the ſame Lymphaticks; and I have ſeen both the *Thymus* and *Glandulæ Thyroidæ*, in a glandered Horſe, all over cancerous, and the Lungs at the ſame time little or no ways tainted. There are in the *Thorax*, beſides the *Thymus* and *Thyroides*, ſeveral Lymphatick Glands about the baſis of the Heart, and ſides of the Lungs: And we may alſo obſerve, many Lymphatick Glands in the Lower Belly, particularly in the Meſentery, and ſome among the fat about the Kidneys, and by the ſides of the Iliack-Veſſels. The Lymphatic Glands in the Limbs are but few, and theſe for the moſt part ſmall in a Horſe, unleſs they happen to be inflated. That which is ſituated in the fat, called the Pope's eye, is generally about the bigneſs of a ſmall walnut; but when the Lymphatick Glands happen to be diſtempered, the ſmalleſt will ſometimes grow to a very large ſize.

When the Lymphatick Glands happen to be diſeaſed in any great degree, then the Lymphatick Veſſels are apt to burſt and cauſe Dropſies. If in the *Thorax*, the whole Cavity of the Cheſt will ſometimes be filled with Water, if in the Lower Belly, a common Dropſy will generally enſue. The diſorders of the other Glands, are alſo attended with many ill conſequences; for when the Liver is diſeaſed, or the bilious Ducts any ways obſtructed, this will in time produce the Jaundice, unleſs great care be taken to prevent it. The parotid Gland, and all others about the Throat, Ears, and Mouth, are generally affected in violent Colds, whereby their Secretions are either obſtructed, or are too profuſe, and when the ſmall Glands and Membranes of the Guts are diſordered, either a violent coſtiveneſs or purging will follow, according as they happen to be more or leſs affected, and if to any extream, with the attendants uſual in ſuch caſes, as Tenſion, inward Inflammation, and ſometimes Mortification. But every one muſt be more or leſs ſenſible, of the miſchiefs that ariſe from diſorders of the Kidneys, for when theſe are any ways hurt, ſo as not to perform their office, eſpecially if they are not in a capacity to ſeparate the Urine from the Blood, then the whole Body becomes ſwoln and inflated, which is generally followed with ruptures of the Lymphaticks, and other ſmall Veſſels, and ſo ends in a ſuffocation; or elſe, in ſtrong vigorous Horſes, riſes in watery Tumors all over the Body, and cauſes what the Farriers improperly call a watery Farcy, which is alſo dangerous, unleſs proper helps be timely adminiſtered. On the other hand, when theſe

Diſeaſes of the Glands.

ſecretions are too liberal, by an over relaxation of the Kidneys; this occaſions a continual profuſion of Urine, whereby the natural Strength is impaired, and the whole animal Frame weakened and debilitated. All theſe effects I have ſeen in Horſes, to which their labour and hard ſervices expoſe them more than other animals. I have likewiſe known ſeveral Glands in the external parts inflamed and come to ſuppuration, and ſometimes indurated and ſchirrous, but moſt of theſe have been ſafely cured either by proper digeſtion only, by exciſion, or by application of cauſticks, which will be fully explained when I come to treat of theſe particular cures. The Glands that ſerve to lubricate the Joints, and the diſeaſes to which thoſe parts are expoſed, will alſo be taken notice of in their proper place.

CHAP. IX.

Of the BRAIN and NERVES.

THE Brain has two remarkable Teguments or membranous covers, the uppermoſt called the *Dura Mater* being very ſtrong, and the undermoſt the *Pia Mater*, from its cloſe adherence to the ſubſtance of the Brain. The *Dura Mater* is tied to the baſis of the Skull, and to all the Sutures or Junctures by Filaments and Blood-veſſels, which communicate with the Scalp, and external parts of the Head; but adheres lightly to the other parts. It has three proceſſes; the firſt is called *Falx*, from its reſemblance to a ſickle, dividing the Brain in two halves. In a Horſe it is not ſo much arched as in Men, becauſe of the flatneſs and length of his Forehead; and, as Mr. *Cheſelden* has obſerved, the upper part of the Skull in Brutes is made in ſuch manner as to fit the folds of the Brain, which indeed is plain to be obſerved in Horſes, where it lies as in a caſe, and by that means is preſerved from being injured by violent concuſſions. The ſecond proceſs runs from the lower and hinder part of the former towards each Ear, where it is fixed to the *Os petroſum*. The third runs downward towards the great *Foramen* or Hole, thro' which the ſpinal Marrow paſſes. The *Dura Mater* has ſeveral large Veins, uſually called *Sinuſes*, to diſtinguiſh them from the other Veins which are cylindrical. Theſe receive the Blood from the leſſer Veins. One runs along the upper edge of the Falx, and a ſmaller one runs along the lower edge. There are beſides theſe ſeveral other *Sinuſes*, *viz.* the *Longitudinalis ſuperior*, the *Rectus* and *Longitudinalis inferior*, and two called the *Lateral Sinuſes*, which begin at the endings of the longitudinal and ſtreight *Sinuſes*, into which the others empty themſelves. Theſe paſs through the eight *Foramen* of the Skull into the internal Jugular Veins. There is alſo a circular *Sinus*, which empties itſelf partly by detached branches into the *Lateral Sinuſes*, and partly into two others called the *Cervical Sinuſes*, which paſs down on each ſide through the great hole at the bottom of the Skull, and through the tranverſe proceſſes of the

The *Dura Mater.*

the Vertebræ of the Neck; but moſt of the *Sinuſes* of the *Dura Mater* empty themſelves into the internal Jugulars.

The *Pia Mater* is a much finer and thinner Membrane than the *Dura Mater*, and adhering cloſe to the Brain, involves its whole ſubſtance, ſomewhat reſembling the film that covers a ripe walnut. It has a vaſt number of very ſmall Arteries that ſpring from the *Cervical* and *Carotids*, and are here divided into extreme minute branches, that the Blood may not enter the Brain with too much impetuoſity, which would be both inconvenient and dangerous. Its Veins are from the Jugulars, and united in ſuch manner, as they may more eaſily open into the *Sinuſes* in fewer and larger Branches, by which this fine Membrane is preſerved from inflammation, which otherwiſe might eaſily happen upon every ſlight accident, if the arterial Blood ſhould meet with any great obſtruction upon it.

The *Pia Mater.*

There is another thin Membrane between the *Pia Mater* and *Dura Mater*, called the *Anchoroides*, which with the other two alſo accompanies the *Medulla Spinalis*, which may be ſeparated by a nice hand and great application, by which it appears analagous to all the other membranous tubes in the animal body.

The *Anchoroides.*

The Brain conſiſts of two principal parts, *viz.* the *Cerebrum* and *Cerebellum*. The *Cerebrum* is that which fills up all the upper and fore-part of the Skull, and is ſeparated from the *Cerebellum* by the ſecond proceſs of the *Dura Mater* above deſcribed. Its upper ſide is divided

The *Cerebrum* or Brain.

divided into two hemiſpheres or halves, and its under ſide into four Lobes, the two poſterior Lobes being larger than the anterior. At the meeting of the four Lobes appears the *Infundibilum* running from the Ventricles of the Brain into the *Glandula Pituitaria*, which Mr. *Cheſelden* takes to be a *Lymphatick*, agreeing with the deſcription former Anatomiſts have given of it, tho' not with the uſe they have aſſigned to it. And this I imagine has proceeded from their not being enough acquainted with the Lymphatic Veſſels and Glands. The upper part of the Brain is of a cineritious or aſhy-colour, called its cortical part, and its lower or inner ſide being white, is therefore called the *Corpus Calloſum*, under which appear the two ſuperior Ventricles, which are divided into right and left by a thin Membrane named *Septum Lucidum*, which is extended between the *Corpus Calloſum* and *Fornix*. The *Fornix* is a medullary ſubſtance which reaches from the anterior or fore-part of theſe Ventricles, beginning with two ſmall roots, and afterwards divides into ſeveral branches called *Crura Fornicis*. In the baſis of theſe two Ventricles are the *Corpora Striata*, which are ſo called from their ſtreaks and variegations, and the *Thalami Nervorum Opticorum*, where the Optick Nerves paſs; and beyond theſe are the *Nates* and *Teſtes*, which are only two ſmall protuberances of the Brain. Above the *Nates* is ſituated the *Glandula Pinealis*, and upon the *Thalami Nervorum Opticorum* are the *Plexus Choroides*, conſiſting of a number of Blood-Veſſels, Glands and *Lymphæ Ducts*. Under the beginning of the *Fornix* is a ſmall Foramen or Hole, with another under its middle, and the ſpace between theſe *Foramina* and the *Cerebellum* under the two anterior Ventricles, conſtitutes the third Ventricle.

The *Cerebellum.*

The *Cerebellum* lies partly under the Brain, and is ſeparated from it by the ſecond proceſs of the *Dura Mater*, which Mr. *Cheſelden* has obſerved to be bony, in all the rapacious animals he has diſſected; and in moſt others it is ſo firm and ſo commodiouſly ſituated, that the *Cerebellum* cannot be eaſily preſſed upon by the *Cerebrum*. The fourth Ventricle belongs particularly to the *Cerebellum*, and is plain to be ſeen when that is divided lengthways. The baſis of the *Cerebellum* conſiſts of two medullary bodies called *Pedunculi*, and the extremity of the fourth Ventricle is named *Calamus Scriptorius*, from the reſemblance it has to a Writer's pen.

The *Medulla Oblongata.*

The *Medulla Oblongata* is a continuation of the medullary part both of the *Cerebrum* and *Cerebellum*, and the ſpinal marrow is a production of the *Medulla Oblongata* which paſſes through the great Foramen or Hole of the Skull, and through the whole channel of the Neck-ſpines of the Back and Loins: It enlarges in a Horſe about the Withers, where the large Nerves are given to the Fore-Legs, and in the Loins where the crural Nerves are diſtributed to the Hind-Legs, Thighs, and all the hinder parts, and the lower end of the ſpinal marrow, from whence theſe and many other Nerves ſpring, is called the *Cauda Equina*, which is a term proper enough in the anatomy of a Horſe. The cover that involves the ſpinal marrow is a production of the Membranes of the Brain already deſcribed, *viz.* the *Dura Mater*, *Pia Mater*, and *Anchoroides*, and in this reſembles moſt of the other tubes in the animal body.

The Nerves.

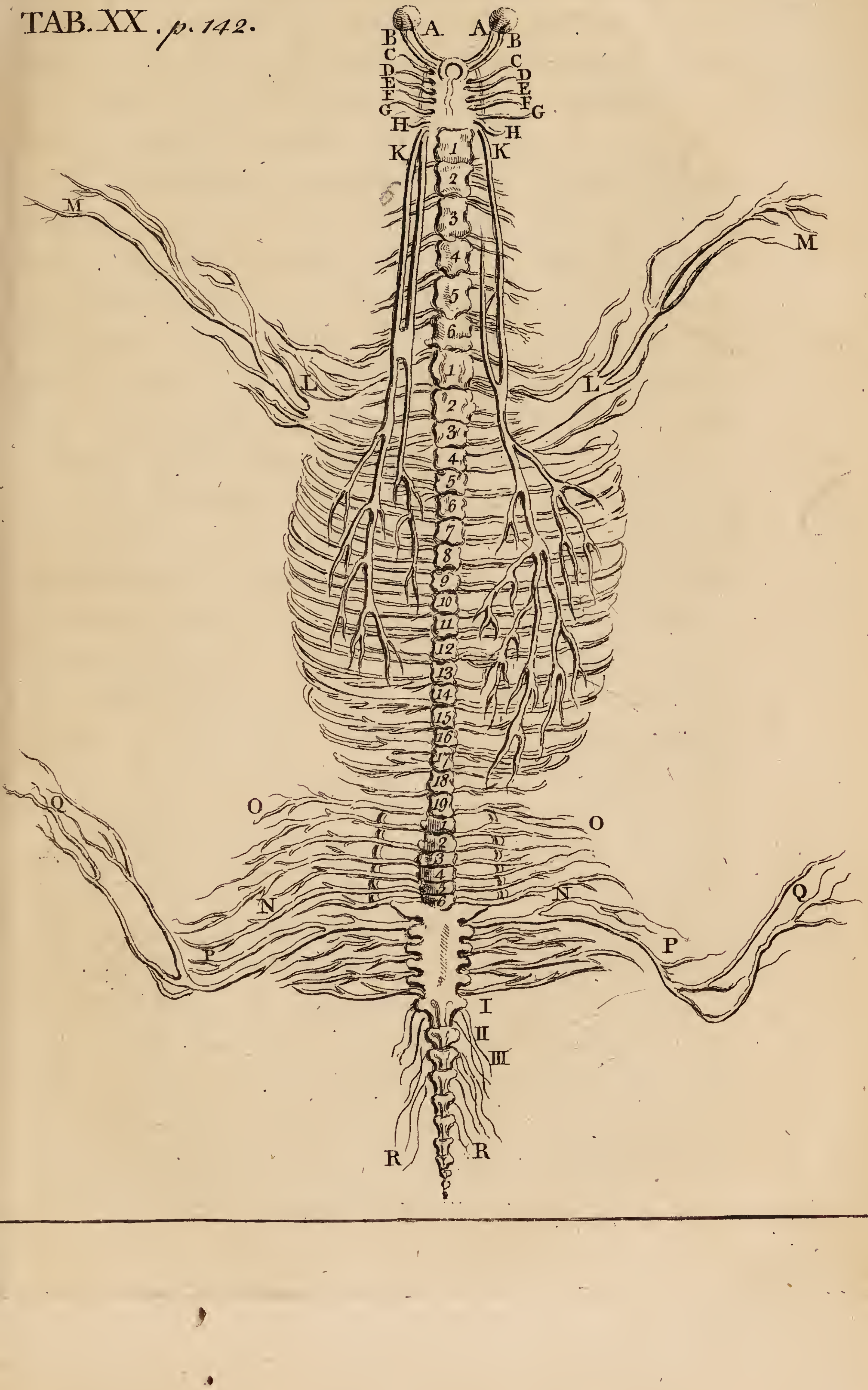
The Nerves are the inſtruments of all ſenſation, and may alſo be accounted the primary cauſe of all motion, as they actuate the Muſcles, which are the immediate inſtruments thereof. All the Nerves take their origins from the medullary part of the Brain, and *Cerebellum*, from the *Medulla Oblongata*, and pith of the Back. At their firſt egreſs they appear like white threads, and have a coat from the *Pia Mater*; and in their paſſage through the *Dura Mater* obtain another from it that is much ſtronger, which make a cover to them in all parts whereever they go. Former anatomiſts have generally reckoned nine pair of Nerves ariſing from the Head, but the moſt modern reckon ten pair, including the firſt pair, which take their origin from the beginning of the ſpinal Marrow, as being chiefly ſpent on the Head.

Their diſtribution into all the parts of the Body of a Horſe.

The firſt are the *Olfactory*, that in Brutes are a production of the two anterior Ventricles of the Brain, which paſſing thro' the *Os Cribriforme*, are ſpread in innumerable imperceptible branches all over the thin Membrane that lines the inſide of the Noſtrils, and ſerve to the ſenſe of Smelling.

The ſecond are the *Optic* Nerves, which chiefly contribute to viſion. They riſe from the

TAB. XX. *p. 142.*


A A
B B
C C
D D
E E
F F
G G
H H
K K
M M
L L
O O
N N
P P
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I
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III
R R
1 2 3 4 5 6
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
1 2 3 4 5 6

the *Thalami Nervorum Opticornm*, paſs through the Sphenoidal Bone, and form the *Membrana retina* in each Eye, which Membrane is by many reckoned the ſeat of the *Gutta Serena*, *viz*. that ſort of blindneſs where no viſible defect or blemiſh appears on the Eye.

The ten pair of Nerves which ariſe from the Head.

The third pair are diſtributed to the Teguments or coats of the Eye, and ſeveral of its muſcles, whence they are called *Motores Oculi*.

The fourth pair are ſpent on the *Trochlear* Muſcles of the Eye. By theſe Muſcles the paſſions are chiefly expreſs'd in the ſeveral motions they give to the Eye, and therefore are uſually called the *Pathetick* Nerves.

The fifth pair, after piercing the *Dura Mater*, divide into three principal branches, the firſt called the Opthalmick, a great part of it being ſpent on the Fat on the Lachrymal Gland, Membranes and Eye-Lids, with ſome branches to the Membranes of the Noſe and Teguments of the Forehead. The ſecond branch gives twigs to the Palate and Noſtrils, to the Cheek and upper Jaw, and alſo to the upper Teeth, with other ſmall twigs to the orbicular Muſcles of the Eye-Lids, Noſe and upper Lip, where they mix with ſome Twigs of the ſeventh pair. The third is diſtributed on the Muſcles of the Cheeks and Tongue, the lower Jaw, and on both the external and internal parts of the Ear. One conſiderable ramification from this branch enters the canal or Sinus of the lower Jaw-Bone, and gives ſeveral twigs to the Lower Teeth, Chin, and Under-Lip.

The ſixth pair unite with the opthalmick branch of the fifth pair, and is ſpent on that Muſcle of the Eye proper to Brutes, called *Septimus Brutorum*, and likewiſe on the Abducent Muſcle of the Eye.

The ſeventh pair, with ſome branches of the fifth, are diſplayed on the internal Ear, and after they paſs through the Skull, give branches to the Muſcles of the Tongue, the Gullet, and detach ſome external branches to the Neck; other branches of this pair are extended to the outward Ear, parotid Glands and Cheeks, all along to the Chin. In Man they ariſe from under the annular proceſs of the *Cerebellum*, but in a Horſe from the *Medulla oblongata*.

The eighth pair are called the *Par Vagum*, becauſe they are diſperſed almoſt into all parts of the body, their branches being blended and mixed with thoſe of ſeveral other Nerves. After they paſs out of the Skull, one branch is ſpent on the Muſcles of the Shoulder-Blade, the principal trunk taking its courſe down the Neck, near the carotid Artery, deals out ſeveral branches to the Head of the Windpipe, and paſſing into the Thorax or Cheſt, it divides into two, the anterior going to the *Pericardium* or Heart-purſe, where ſome of its branches unite with the Intercoſtal, and ſupply many ſmall branches to the Heart, *&c.* the poſterior branch deſcends with the Gullet, ſupplies the Lungs and Stomach with innumerable branches, which is the reaſon why ſo many painful ſymptoms ariſe affecting the Head, when the Stomach of any creature is in the leaſt hurt, or even overcharged. The remaining branches are joined with the Intercoſtals, and paſs downwards into the Lower Belly.

The Intercoſtal takes its beginning from the fifth and ſixth pair, and paſſing out from a large Ganglion or knot formed by ſeveral branches, which communicate with ſome of the firſt ſpinal Nerves, and deſcending with the carotid Arteries, communicates with the *cervical* Nerves that ariſe from the Pith of the Neck, and gives branches to ſome Muſcles of the Head and Neck. As it enters the Cheſt from another knot or Ganglion, it gives out branches, by which the Windpipe, Heart, and Lungs, are principally ſupplied, where its branches again communicate with the eighth or *Par Vagum*. After this the Intercoſtal runs down by the Vertebræ or Rack Bones of the Cheſt, where it communicates with the branches ſent from between each Vertebra, and when it has paſſed thro' the Midriff it forms another Ganglion a little above the Kidneys, into which ſome branches of the eighth pair alſo enter. From this knot or Ganglion proceed the Nerves of the Guts, Liver, Spleen, *Pancreas* and Kidneys, *&c.*

The ninth pair being principally ſpent on the Tongue, are the chief inſtruments of Taſte. Other branches of this Nerve are diſperſed in the Glands and Muſcles of the upper part of the Breaſt and Throat.

The tenth pair, which ſome have reckoned the firſt of the *cervical* Nerves, riſe from the beginning of the ſpinal marrow, juſt as it paſſes through the Skull, and are all ſpent on the oblique

lique and exterior Muſcles of the Head, except ſuch branches as join the Intercoſtal, with which this pair unites at its firſt Ganglion, and thereby communicate with the other Nerves above deſcribed.

The Nerves which ariſe from without the Skull.

The Nerves that ariſe from the ſpinal Marrow, after it paſſes through the Skull, are in Men thirty in number, but in Horſes thirty-ſeven pair, which I ſhall but juſt name, they being in all creatures equal to the number of the Vertebræ of the Neck, Back, Loins, and *Os Sacrum*. The Neck has ſeven pair, which are diſperſed partly on the Muſcles of the Face, partly on the Muſcles of the Neck, and partly on thoſe of the Shoulders and Fore-legs, which being joined with a branch from the ſecond and fourth, compoſe that remarkable Nerve called the *Phrenick*, which goes to the *Midriff*, *Pericardium*, and other parts within the Cheſt.

The firſt two pair of the ſeventeen Vertebræ of the Back, communicate with the lowermoſt of the Neck, ſending forth ſome twigs to the Neck and Shoulders. The ſecond and all the other fifteen pair, ſend each of them a twig to the intercoſtal Nerve, by which they communicate with all the Nerves of the Viſcera contained both in the Cheſt and Lower-Belly, their other branches being chiefly ſpent on the intercoſtal Muſcles which lie between the Ribs, as alſo on the Muſcles of the Back, with ſome twigs that are diſperſed on the Lower-Belly.

The Nerves that ariſe from the Vertebræ of the Loins and *Os Sacrum*, are chiefly diſperſed on the Muſcles of the Loins, Hips, and Hind-

Legs, only that the anterior branches of the firſt pair of the Loins are diſperſed all over the fleſhy part of the Midriff, where they communicate with ſeveral of thoſe above deſcribed. Some branches are alſo ſpent on the Muſcle *Pſoas*, and the poſterior branches on the *Longiſſimus Dorſi*; from theſe alſo are formed that remarkable Nerve called the *Sciatick*, which is the largeſt both in Men and Quadrupeds, and is ſo well known for being the ſeat of the Sciatica or Hip-Gout, a diſeaſe from which, I imagine, Horſes are not altogether exempted, having ſeen ſome few caſes which plainly ſeemed to be of this kind. The *Penis* of a Horſe and the *Matrix* in a Mare, are alſo furniſhed from the anterior branches of the Loins, and the Teſticles from the anterior branches of the *Os Sacrum*, and from theſe alſo many ſmall twigs proceed to the Tail, which are neceſſary to its various motions, and may be plainly ſeen in a Horſe new docked, eſpecially when the Blood is compleatly ſtopped by a ſtrait Ligature.

To this ſhort deſcription of the Nerves I ſhall only add, that though their beginnings are not only very ſmall, but of an exceeding ſoft texture, yet as they paſs a little way from their origins, they grow very ſtrong and tenacious, and by their communications one with another, form ſeveral large trunks and branches which are proportioned to the parts where they are ſituated, and which they are to ſerve, even as the Muſcles are ſtronger in proportion to the weight they are to move, and in this reſpect correſpond with the Nerves; for in the Limbs and ſome other parts where the Muſcles require a greater ſupply of ſpirits, the nervous trunks are the largeſt, and where there is a conſtant and continued motion, the nervous *Fibrillæ* are the moſt numerous, as in the Heart, Stomach, and Guts, as alſo in the Lungs and Midriff. It may alſo be obſerved of the Nerves, that notwithſtanding their diſtinct origins, yet the whole nervous ſyſtem is ſuch, that all of them communicate more or leſs one with another, tho' we are not in the leaſt able to trace their innumerable, minuteſt communications. The Nerves have an external cover or Coat from the Membranes, that invelope the Brain, and ſpinal Marrow, which has been diſcovered by injecting wax of different colours into the Blood-Veſſels, whereby the external ſurfaces of the Nerves are tinged with the colour of the wax injected into theſe Veſſels, and communicated from them to the Coats of the Nerves, while their internal ſubſtance has not been chang'd, but remained white. When a Nerve is cut through, it ſeems to have no viſible bore or cavity in it, and ſcarce any moiſture, its texture being exquiſitely fine and compact; but that they have a moiſture or *Liquidum Nervoſum*, as anatomiſts term it, will not be deny'd by thoſe who have examin'd them carefully in the Body of any animal, where they appear flaccid, and no ways dry, as ſome of the Cartilages and Bones, which nevertheleſs have their proper Juices circulating thro' them. In like manner the Nerves have alſo their proper Fluids, though their exact texture, like many other minute things in the animal machine, can neither be ſeen by the naked Eye, nor by the help of Glaſſes. That they are the primary inſtruments both of ſenſe and motion, is ſufficiently known, whether this properly in them proceeds from the animal ſpirits, or from their vibrations, or from both. The ſtructure and diſpoſition of the Nerves, which all go off in right angles, and not by circumvolutions and windings, as the Blood-Veſſels, and *Lymphæ Ducts*, ſeems to favour a vibration, whatever ſhare the nervous juice, by its inconveivable ſubtilty, may alſo have in theſe ſenſations: This may be further conjectur'd, by the ſudden and immediate impulſe whereby all theſe ſenſations are communicated to the imagination in a moment, which could not be ſo eaſily conceived, if there was nothing beſides a meer undulation of the nervous fluids.

Senſation how performed.

From what has been ſaid concerning the Nerves, and the ſtructure of the ſeveral parts of the animal Body, we may eaſily account for all the known ſenſations, *viz.* of Seeing, Hearing, Smelling, Taſting, and Feeling, in regard there is not the leaſt point throughout the whole animal frame, without an infinite number of little ſmall branches of Nerves; by theſe ſight is communicated to the Eyes, the moment the viſual rays fall upon the *Retina:* Smells as ſoon as any odoriferous *Effluvia* ſtrike upon the fine Membrane, that lines the Noſtrils: Sounds, when impreſſions are made on the auditory Nerves, that move the parts of the internal Ears, which are wonderfully contrived for that purpoſe. Taſte is alſo conveyed by the Nerves that are diſperſed on the Tongue, and other fine Membranes within the Mouth. And as to the ſenſe of Feeling, it is the moſt univerſal of all others, in regard no part of the Body can be touched in the leaſt degree, but we are immediately ſenſible of it, and the ſame is more or leſs obſervable in all other animals.

CHAP. X.

Of the Eye.

THE Eye is of a convex, globular form, covered by its proper lids, and incloſed within an orbit or ſocket, formed for that purpoſe out of the Bones. The Eyelids preſerve the Eye from duſt, or other external injuries; are an expanſion of the Muſcles and Skin, the inner Membrane being of an exquiſite fine contexture, that they may no ways hurt or impair the ſurface of the Eye. Their edges have a cartilaginous or griſly rim, by which they are ſo fitted as to meet cloſe together in time of ſleep, or upon any emergency, to prevent duſt or other accidents, that may hurt its delicate texture.

The Orbit of the Eye.

The orbit or cavity in which the eye is ſituated, is lined with a very freeable looſe fat, which is not only eaſy to the Eye in its various motions, but ſerves to keep it ſufficiently moiſt, as the *Lachrymal* Glands, ſeated in the outer corner or angle of the Eye, ſerve to moiſten its ſurface, and to waſh off any duſt or dirt that may get into it. At the inner corner of the Eye next the Noſe, is a Caruncle, which Mr. *Cheſelden*

TAB. XXI. *p. 151.*

Fig. II.

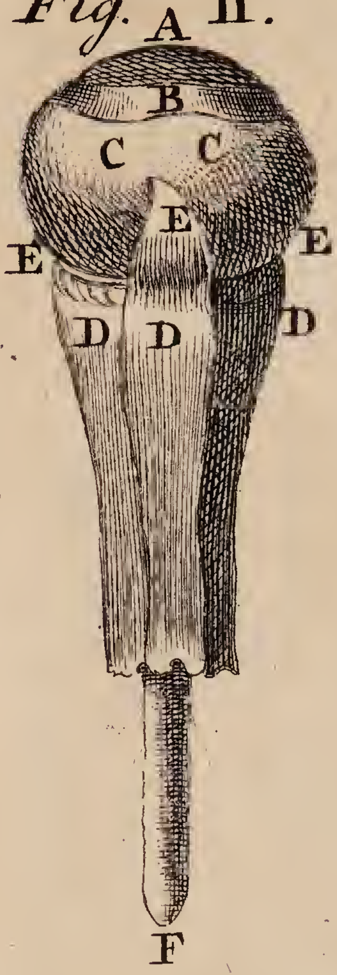


Fig. I.

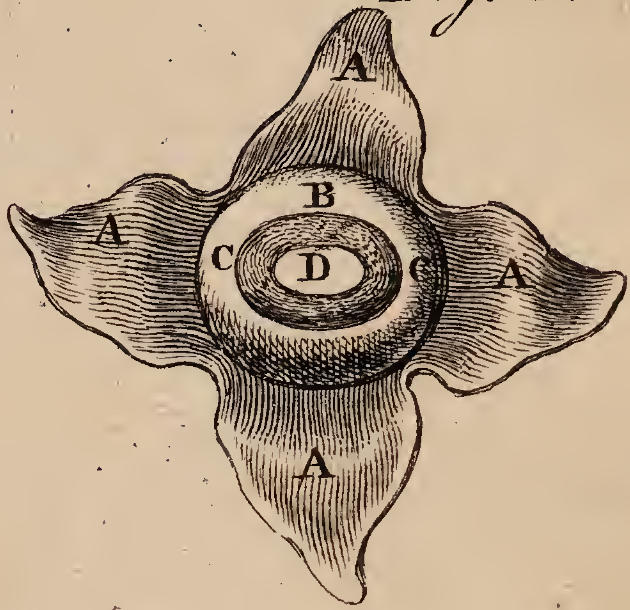
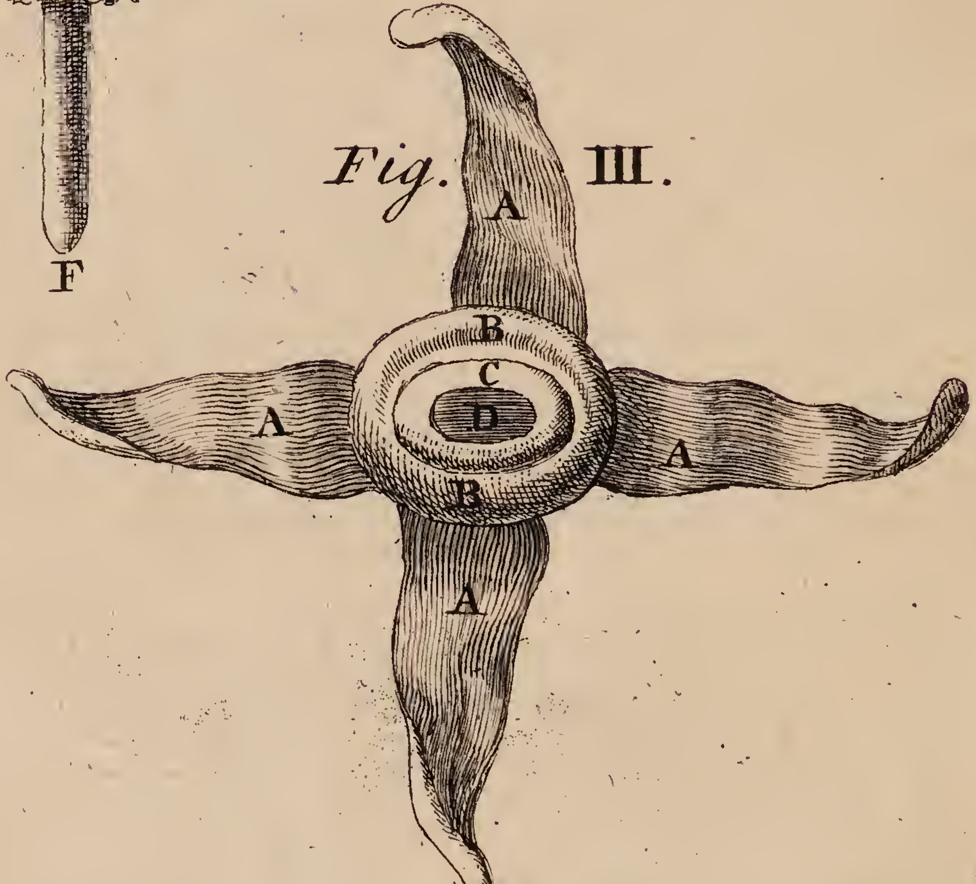


Fig. III.



ſelden thinks may be placed there, to keep that corner of the Eye from being totally cloſed, that any tears, or gummy matter may flow from under the Eye-lids in the time of ſleep, or into the *Puncta Lachrymalia*, which are little holes placed one in each Eye-lid, to carry off any ſuperfluous moiſture or tears into the Noſe. And it is chiefly when this moiſture abounds too much, that it runs down the Cheeks in ſome diſeaſes of the Eyes, the *Puncta Lachrymalia* being ſtop'd, or not being large enough to receive the Moiſture. This is often to be obſerved in Horſes, and I have ſeen them alſo ſhed tears plentifully in docking, and other painful operations, and likewiſe ſome very doged Horſes will do the ſame, when their ſtubbornneſs has been conquered and overcome.

Its Membranes or Coats The 1ſt.

The Eye has four Membranes or Coats, and three Humors. The firſt Membrane is called *Tunica Adnata*, or *Conjunctiva*, and covers all that part of the Eye which appears white in a Man, but in a Horſe variegated with ſtreaks and ſpots of Brown, and being reflected back, lines the inſide of the Eye-lid, and by that inverſion, it is alſo the means to prevent motes, duſt, ſmall flies, or any other extraneous matter getting behind the Eye-ball into the Orbit, which would be extremely dangerous. This coat is full of Blood-Veſſels, which appear in little red ſtreaks, all over the white of the human Eye when it is inflamed, and where there is but little white, as in the Eyes of Horſes, the Eye appears fiery, and the Eye-lids when opened and turn'd back look red.

The 2d. The ſecond coat has its fore-part very ſtrong and tranſparent like horn, and is therefore called the *Cornea* or horny-coat; and the other part, which is opaque and dark, is called *Sclerotis*. Under the *Cornea* lies the *Iris*, which in a Horſe inclines to a cinnamon colour. The middle of this Membrane, or Coat, is perforated for the admiſſion of the rays of light, and is called the *Pupil*. Under the *Iris* lie the *Proceſſus Ciliares*, which go off in little Rays, and in a ſound Eye are plainly to be ſeen; as often as theſe proceſſes contract, they dilate the pupil, which may always be obſerved in places where the light is ſmall, but in a ſtrong light, the circular fibres of the *Iris* act as a Sphinctre Muſcle, and leſſen the Pupil, and therefore a dilated or wide Pupil in a ſtrong light, is almoſt always a ſign of a bad Eye. Mr. *Cheſelden* obſerves, that in Men the Pupil is round, which fits them to ſee every way alike, and is the ſame in many other creatures, eſpecially thoſe that are the prey of ravenous birds and beaſts, that they may be always on their guard, to ſpy out their enemies and to avoid them; but Horſes, and other large creatures that feed on graſs, and are not ſo much expoſed to dangers of this kind, have the pupils of their Eyes oblong horizontally, by which they are able to view a large ſpace upon the ground, which is alſo the reaſon, why a Horſe that has good Eyes, ſhall carry his Rider as ſafe in the Night as in the Day, and will find the way better with once or twice travelling, than ſome Men that have travelled the ſame way twenty times; and if the rider happens to lead him out of the way, will fall into it again of his own accord.

Under the *Sclerotis* lies the *Choroides*, which is the third coat or tunicle of the Eye, and is ſo called from its reſembling the *Chorion*, which inwraps the *Fœtus in Utero*. In Men it is of a duſky brown-colour, and in Beaſts of prey, as the above mentioned author obſerves, a great part of this coat is white, which enables them to ſee bodies of all colours in the night better than Men, in regard white reflects all colours. But Horſes and other creatures that feed upon graſs, have the ſame parts of this Membrane of a bright green, which enables them to ſee with leſs light, and makes graſs an object they can diſcern with greateſt ſtrength, and therefore it is called ſometimes *Tunica Uvea*, from its reſembling the colour of a grape, and has only obtained that name in the human Eye, from the earlieſt anatomiſts, who have probably begun their anatomical ſtudies in diſſecting brute creatures. The 3d.

The innermoſt or fourth Tunicle, is called the *Membrana Retina*, which is only an expanſion of the Optick Nerve upon the *Choroides*, and encompaſſeth the glaſſy humor like a net. By a combination of the rays of Light upon the fine filaments of this Membrane, all external images are convey'd by the optic Nerves to the Brain. The 4th.

Within the tunicles or coats of the Eye, are ſeated the three Humors which chiefly compoſe the Eye-ball. The firſt is the *Aqueous* or watry The Humors.

The Watery Humor.

watery humor, which lies foremoſt, and ſeems chiefly a proper *Medium*, to preſerve the chryſtaline humor from injuries in caſe of wounds, bruiſes, or any other external cauſe. Mr. *Cheſelden* thinks it may alſo ſerve for the chryſtalline humor to move forward in it, while we view near objects, and backwards for remoter objects, as being agreeable to the laws of opticks, for which he gives ſome reaſons, from the mechaniſm of the Eyes of Fiſhes, which the curious may ſee in the laſt edition of his anatomy of the human body, pag. 296.

The Chryſtalline.

Behind the aqueous humor lies the chryſtaline, in a very fine Membrane called *Aranea*, being thin like a ſpider's web. The figure of the chryſtaline is a depreſſed globe or ſpheroid, and its uſe to refract the rays of light that paſs through it, ſo that all the rays proceeding from the ſame point of any object, being firſt refracted on the *Cornea*, may be united upon the *Retina*.

The Glaſſy Humor.

The *vitreous* humor lies behind the cryſtaline, being concave on its foreſide, to make a convenient lodgment for the chryſtaline, and its hinder part convex, agreeable to the globular form of the Eye, upon which the *Tunica Retina*, and *Choroides* are ſpread. This humor poſſeſſes a ſpace larger than both the other two, and being of a hue like a light-coloured green glaſs, is a proper medium not only to keep the chryſtaline humor, and the *Retina*, at a due diſtance one from the other, but by its colour to prevent the rays of light falling too forcibly upon the latter, which might weaken or impair the ſight.

CHAP. XI.

Of the EAR.

BECAUSE it may be expected, before I conclude the anatomical part, that I ſhould alſo take ſome notice of the Ear; I ſhall therefore, to gratify the deſire of thoſe who have any curioſity that way, add ſome few things to what has been already ſaid concerning it, wherein I ſhall be as brief as poſſible, in regard Horſes are not very much ſubject to diſeaſes in the organs of Hearing, neither can ſuch defects in them be eaſily known, unleſs they are cauſed by outward accidents, or attended with ſwelling, heat, and impoſtumation, or other viſible ſymptoms which ſometimes happens. But if a Horſe ſhould loſe his Hearing, it would be difficult to find that out any other way, than by his not anſwering to the call of the voice, or by his diſregarding all manner of ſounds and noiſe. And if this proceed from any defect in the organs, or obſtructions in the auditory Nerves, it would be difficult to find a remedy for it.

The external Ear.

It has been obſerved in another place, that the external Ear is of uſe to collect and gather in ſounds, and direct them to the *Meatus Auditorius*, or paſſage that leads to the Drum, otherwiſe called *Membrana Tympani*. The paſſage has a Membrane full of little Glands, where a thick Mucus is ſeparated, which is called the wax of the Ear. This not only keeps the paſſage moiſt, but prevents duſt and inſects getting into it; and at the ſame time ſerves to ſoften the Noiſes from without, and renders them leſs harſh and grating. The Hair that is in the inſide of the Ears of ſome Horſes is alſo a defence to the Ear, and it may be obſerved in coarſe plain Horſes for draught or burden, that have large Ears, and the paſſage into the Ear large, there is alſo the moſt Hair, and in ſome a down like wool; and therefore it may prove injurious to ſuch Horſes to have this wholly clipped out and made bare, as is common for ſale, by expoſing them to colds in their Heads, eſpecially if they happen to ſtand ſoon afterwards in ſharp froſty winds, or in great rains. The ſetting up of the Ears may be alſo injurious, eſpecially to Horſes that are fearful or ticklish, as it may more or leſs mar their hearing. For all Horſes upon hearing any noiſe point their Ears that way from whence it comes, (as I have already obſerved in treating of the Muſcles of the Ear) and when their Ears are ſo ſet up and fixed as to deprive them of that liberty, it muſt cauſe them to hear more imperfectly, and makes them oft-times unruly, and ſome of them grow ſo ſhy with this treatment, that they can ſcarce ſuffer their Ears to be touched.

The Organs of Hearing.

At the further end of the paſſage into the Ear is the *Membrana Tympani*, or Drum, already mentioned, which is extended upon a circular ridge of bone. On one ſide of this Membrane is a very ſmall aperture covered with a valve, which probably ſhuts to prevent any extraneous matter getting into the inner cavity, and may be of uſe to give vent to impoſtumations or gatherings formed in the Ear, if any ſuch ſhould happen within the barrel. Behind it is a cavity called the *Concha*, where four ſmall remarkable Bones are placed, *viz.* the *Malleus*, from its reſembling a hammer; the *Incus*, being in ſhape ſomething like an anvil; the *Stapes*, which in Men is like a ſtirrup, but in a Horſe triangular; and the orbicular Bone, which links the two laſt together like a chain. Theſe are actuated by their proper Muſcles, ſo as to aſſiſt in ſtretching or relaxing the Drum. From the inner cavity or barrel of the Ear goes the *Euſtachian* tube, which reaches towards the palate, through which the air paſſes in and out to give a vibration to the Membrane or Drum, and a vent to any ſuperfluous fluid, that might happen to be ſeparated within the cavity. There is an oval hole, called the *Feneſtra Ovalis*, which opens into this cavity; and near it another round hole, called the *Feneſtra Rotunda*, both which are covered with thin Membranes, and lead to a cavity called *Veſtibulum*, and thence into the *Cochlea*, ſo called from its ſpiral windings like a ſnail's ſhell, and into three ſemicircular canals, which altogether have the name of *Labyrinth*, in which are ſpread the auditory Nerves.

The Ear is ſo extraordinary a piece of mechaniſm, that ſeveral learned anatomiſts have given very minute deſcriptions of it; particularly *Valſalvo*, an Italian, has wrote a pretty large Latin Treatiſe, profeſſedly of the human Ear, with the figures of its parts as large as the life, done with the greateſt beauty and exactneſs; but it will be ſufficient here to obſerve, that every part of that curious organ is perfectly ſuited to promote the important end of Hearing, and in ſuch peculiar manner as to render it the moſt pleaſing and grateful to every creature. The ſounds being firſt collected in the external Ear, are convey'd directly to the *Membrana Tympani*, at the ſame time the *Euſtachian* tube affords a paſſage for the egreſs and regreſs of the air into the barrel, like the hole in a Drum, by which a vibration is given to that Membrane, which therefore is uſually called the Drum of the Ear. The vibration or ſhaking of the drum makes it ſtrike upon the *Malleus* or hammer, that is placed in the cavity behind it, and ſets the other three Bones in motion; and as this force happens to be more or leſs exerted, ſo the ſounds muſt be ſtronger or weaker upon the Ear, which if they chance to be extremely loud, are hurtful; and if ſharp and grating, unpleaſant. But to prevent theſe and other accidents, the *Mucus* of the *Meatus Auditorius*, and the moiſture of the Muſcles, and Membranes of the internal Ear, not only help to qualify and ſoften the ſounds, but preſerve the drum from growing dry and criſp, which in that caſe might ſometimes expoſe it to be broke or torn. The four little Bones juſt mentioned, fill up the cavity behind the drum ſo conveniently, as may prevents its being beat inwards by the violent impreſſions of loud noiſes from without. The other cavities which form the La-

Labyrinth, are alſo contrived in ſuch manner as to keep the Ear from being hurt; for by their ſeveral circumvolutions and windings, all ſounds are communicated gradually, and their œconomy is alſo preſerved, ſo as their impreſſions may not ſtrike the auditory Nerves, which are diſperſed on all the Membranes that line thoſe cavities, with too great force, or in a jarring and confuſed manner; but all ſounds being in ſome meaſure modulated in the Labyrinth, are by the Nerves convey'd directly to their origin in the Brain, where they are clearly and plainly diſtinguiſhed.

How far a Horſe may exceed, or fall ſhort of other brute animals in point of Hearing, no one can exactly determine, neither is it indeed material to our preſent purpoſe. Thoſe who have a curioſity in ſuch matters, may be very agreeably entertained, by conſulting natural hiſtory, where many things are related concerning the peculiar properties and inſtincts, obſervable in different creatures, and the infinite variety the divine wiſdom has thought fit to diſplay in the œconomy of the animal creation. It is well known that a Horſe has ſufficient quickneſs in all his ſenſes; ſome are ſo acute and nice in ſmelling, as not to touch a bit of Hay that another has breathed upon, nor drink in a pail after another Horſe, until it has been emptied and rinced; and ſome will ſcarce eat any kind of provender but what is ſweet and of a good flavour, which we may obſerve them to diſtinguiſh both by their ſmell and taſte; and by their ſmell they will alſo diſtinguiſh perſons.

ſons. Their Eyes are alſo perfectly ſuited, in the manner already related, both for their own ſupport and preſervation, and for the various ſervices we require of them. And as to Hearing, a Horſe has all the properties needful in a creature of great ſagacity and uſe. Some Horſes will diſtinguiſh their keeper, not only by his voice, but by the tread of his foot, before he enters the ſtable, and ſome will diſtinguiſh the ſound of another Horſe's foot at a very great diſtance, and before it can be heard by us. When a Horſe is in a fever, and parched with heat and drought, tho' at that time we may ſuppoſe his ſenſes to be very dull and much confuſed, yet he will prick up his Ears at the leaſt noiſe of a pail. Horſes are alſo very acute in diſtinguiſhing ſounds, appearing greatly delighted with ſome, and diſpleaſed with others. The grunting of a Hog, or the braying of an aſs, will put ſome Horſes upon the fret, or any harſh ſound made by an unuſual inſtrument: On the other hand, all fine Horſes love the Yelling of the Hounds, are elevated with the horn, and with various kinds of Muſick, and ſome are quite tranſported at the ſound of drums and trumpets, and other martial inſtruments; which ſhews that a Horſe has a well-form'd Ear, and a very great delicacy in Hearing.

A

DISCOURSE

OF

FEEDING and EXERCISE.

WITH THE

Right Method of adminiſtring Medicines to Horses, &c. Being a proper Preliminary or Introduction to the Third Part.

BEFORE I enter upon the particular Diſtempers of Horſes, I judg'd it might be neceſſary to premiſe ſome things concerning Diet and Exerciſe, which I hope may be of uſe, as well to Gentlemen, as to thoſe who practiſe Farriery, in regard many of the Diſeaſes to which Horſes are expoſed, proceed from ſome ill management in their Feeding, want of proper Exerciſe, or from Exerciſe ill-tim'd, or when it is too violent and given to exceſs. Allowing too much water or too little, or letting Horſes drink at improper times; and to ſeveral other ſuch miſtakes and neglects. On the other hand, many Horſes are hurt by overmuch care and ſollicitude, when their owners, or the perſons who look after them, think they can never do enough to make them look well and appear beautiful. But if we conſider the ſimplicity of a Horſe's food, which conſiſts chiefly of herbage and grain: If this be good of its kind, and rightly diſpenſed, if it be well proportioned and well-timed, and the other requiſites abovementioned carefully attended to, Horſes would in ſuch circumſtances ſeldom contract hurtful diſeaſes as they often do; and even notwithſtanding the many errors commited by neglect, ignorance, or over-carefulneſs, I have obſerved, that their diſeaſes, are for the moſt part, not near ſo much complicated as thoſe of the human Body, tho' by the ignorance of the generality of our practitioners, they often prove more fatal.

The Signs of Health in a Horſe.

Now it ought to be laid down as a pretty ſure maxim, that when a Horſe is perfectly well and in good plight, that is, when a Horſe eats a moderate allowance of Hay and Corn, when he drinks a moderate quantity of water, indures his exerciſe well, without being faint and diſpirited, when his exerciſe does not take him off his Stomach, but rather quickens his appetite, when his coat lyes ſmooth and looks wholeſome, we may reaſonably ſuppoſe, nay even conclude, ſuch a Horſe to be free from ſickneſs, and therefore to give him any thing to prevent ſickneſs or diſorders, muſt in a great meaſure be ſuperfluous, if not hurtful.

Phyſick no ways neceſſary to Horſes when in Health.

Some are not ſatisfy'd, when the Horſes have all the uſual ſigns of health, but order them to be bled and purg'd often, whether they really ſtand in need of it or not, according to a riveted cuſtom, which ſeems to prevail more in this nation than any where elſe. Others think their Horſes cannot continue in any degree of Health without cordial balls, which are generally given with a view to carry off ſurfeits, whether they be ſurfeited or not, to create a good appetite, and to preſerve their wind. Theſe balls being for the moſt part, made of warm aromatick and carminative ſeeds, with ſome few pectorals, are harmleſs enough, eſpecially in the ſmall doſes uſually exhibited; but are frequently needleſs, and in ſome caſes may be hurtful, eſpecially to Horſes of hot conſtitutions; which thing ought to be previouſly conſidered, for theſe above all others, require a gool regimen both of food and phyſick.

The Method of keeping in ſome Foreign Countries.

In *France*, *Germany*, and *Denmark*, Horſes are ſeldom purged, unleſs they be ſome way or other diſeaſed, but have alteratives given them to ſweeten and invigorate their Blood. The uſe of the liver of Antimony, we have chiefly from the *French*, who have it in good eſteem for their Horſes, and deal as much in that as we do in purging. The *Italians* ſeem to have little or no notion either of purging or alteratives, by what I have ſeen of their writings, but take much notice of the temperaments of Horſes, after the manner of the ancients, *viz.* the ſanguine, melancholick, phlegmatick, and cholerick, and have aſſigned remedies for each, and have alſo laid down the ſigns to know when either of theſe are predominant. Indeed whenever a redundancy happens of any of theſe Humors, a Horſe may then be looked upon as diſeaſed, and the redundancy ought to be check'd or removed. But the natural temperament and diſpoſition of a Horſe, can be no more altered, than his colour can be changed from black to white, or from brown to grey.

The *Germans*, but eſpecially the *Danes*, and *Holſteiners*, give often, by way of prevention, powders made of warm aromaticks, with plenty of juniper and bay berries, mixed with a proportion of common ſalt, which perhaps may be agreeable enough in their cold country. The *Hollanders* do the ſame, and in the provinces where they manufacture the Rape Oil, they feed their Horſes with the rape-cakes, which they reckon wholſome, and indeed when theſe are join'd with their diet, they make them extremely fat and ſleek, but their fleſh is no ways ſolid and durable.

I have never ſeen any books publiſhed by *Spaniſh* authors on the diſeaſes of Horſes, which may probably be owing to the genius of the *Spaniards*, who are not ſo much addicted to writing as other polite nations; but thoſe gentlemen of my acquaintance who have been in *Spain*, all agree in this, that no people in the world are more careful of their fineſt Horſes than they. The *Spaniards* feed their Horſes very much with green barley, and other green herbage, which that country, eſpecially the ſouth parts, produce almoſt all the year more or leſs; and we find the *Arabs* and *Moors* of *Barbary*, follow the ſame method, and depend more on the changes of diet, exerciſe, and good dreſſing, for the preſervation of their Horſes, than on any kind of phyſick, whether cordial or alterative; and where we give hay and oats, they feed with barley and ſtraw, theſe being the product of thoſe countries, as hay and oats are the product of ours. They are very curious in their grooms, and allow one to every fine Horſe, who is continually imployed about him in dreſſing, feeding, and currying, and in watching againſt all accidents; and as the buſineſs of theſe fine Horſes is ſeldom more than play, they are therefore ſeldom ſubject to ſickneſs, but when they happen to fall ſick, none are more ſolicitous for their recovery than the *Spaniards*, but eſpecially the *Turks* and *Arabians*, who are then very liberal in their cordials, and it is evident many things in the practice of Farriery, have been borrow'd from the *Arabians*, eſpecially cauterizing, and firing, and making of rowels, and iſſues, which we eaſily gather, by peruſing the books wrote by the *Arabian* Phyſicians; and we may alſo obſerve, ſome of the fineſt Horſes that come from *Turkey*, *Egypt*, or *Arabia*, to have been fir'd when they were colts, meerly to ſtrengthen their Limbs; and the ſame may be alſo ſeen on the Barbs, and on ſome *Spaniſh* Horſes, who have learned that cuſtom from the *Moors*, from whom they have probably had their beſt breed.

Our Provender ſuited to the Conſtitutions of our own Horſes.

But with reſpect to our own Horſes, I believe none are better fed than they; we have, perhaps, the beſt corn and hay, that is to be met with in any country. Our oats, when they are well ripen'd or kiln dry'd, make a more hearty durable diet than barley, and are much more ſuited to the conſtitutions of our own Horſes, as we find by experience. Our climate being the moſt temperate, the hay is generally well got, without exceſſive heat, oftentimes in dry weather, with fine freſh breezes, and without much ſun-ſhine, whereby it retains all the virtues of the herb; for tho' it is become a proverb, to make hay while the ſun ſhines, yet this ought to be underſtood, not to loſe the opportunity of fair weather, for hay, and all other herbage is beſt, when dry'd in the ſhade. Indeed ſome parts, from the nature of the ſoil, produce but indifferent hay, and in very wet ſeaſons a great deal of hay is ſpoil'd; yet the rains are ſeldom ſo univerſal, but that we have always ſufficient for our beſt Horſes, and ſeldom want graſs of various kinds in the ſeaſon, as often as it is required; ſo that if our Horſes ſuffer by their diet, it is not ſo often owing to the quality of their food, as to the quantity, either giving them too much, or too little, in proportion to their labour.

The Qualities of Hay.

I need not acquaint any one who has been converſant about the feeding of Horſes, what ſort of hay is the beſt, and moſt wholeſome, ſince it is ſo well known that the hay which is hard, of a pale green, and fulleſt of the herb and flower, is always to be prefer'd to that which is ſoft and without flavour; though in ſome ſeaſons, and in ſome particular places, the hay will be good and ſweet, when much of the flavour is loſt, which frequently happens, by its ſtanding too long on the ground waiting for fair weather, or for want of hands to get it in before the flower drops; and this is pretty univerſal, when the rains fall immediately before the hay-harveſt, or in hot ſcorching ſuns without clouds.

Mow-burnt Hay.

When the hay is forc'd to be got in, in very wet weather, a great deal of it is apt to be mow-burnt. Horſes will eat this ſort of hay as ſoon as any for a change, unleſs when it happens to be very much ſmatch'd indeed, neither do they receive ſo much damage from it as ſome imagine, though I ſhould not chuſe to give mow-burnt hay for a conſtancy, becauſe it is apt to bind, and make ſome Horſes too coſtive. However I have often allowed it to ſick Horſes, when they would reliſh no other; for when this accident happens of taking fire in the mow, if the flower was not dropp'd before it was cut down, it is no ways diſagreable either in taſte or flavour; and in this caſe, I always prefer it for ſick Horſes, either to new or ſoft hay, for it excites them to drink plentifully, which is always a great benefit to them, as the drinking helps to dilute their Blood, and to promote the glandular diſcharges.

New Hay.

New hay is never reckoned fit for any but working Horſes, for till hay has ſweated out its ſuperfluous moiſture, it abounds with crude viſcid juices, which are hard to digeſt, and therefore may cauſe ſickneſs, or breed impurities in the Blood; ſo that is not fit to be given till the ſpring, or at leaſt till after *Chriſtmas*, to Horſes that are not in hard labour or ſtrong exerciſe, for then it becomes dry and brittle, and the faint ſmell wears off, which till that is gone, both renders it unpleaſant and ſurfeiting.

Rye Graſs Hay.

Rye-graſs hay is ſeldom given but in the months of *Auguſt* and *September*, except to the horned cattle. Before *Michaelmas* it is tolerably hard and dry, eſpecially in dry ſeaſons, and many feed their working Horſes with it mixed with dry clover, but afterwards it imbibes ſo much moiſture, that it becomes unwholſome, and few Horſes that have been uſed to good Hay will care for it. As for clover, either green or dry, it is extremely ſurfeiting, unleſs it be given ſparingly, though moſt Horſes have a good reliſh to it, and when they are ſuffered to eat much of it, often produces cholicks, and many fatal diſorders, which the farmers who feed moſt with it, often experience among their own Horſes to their coſt.

All kinds of hay ſhould be given as freſh as poſſible from the ſtack, eſpecially in winter, or in wet ſeaſons, for at ſuch times, even the beſt will imbibe a great deal of moiſture, and ſoon turn ſoft and muſty in the hay-lofts.

Many Horſes will not feed well upon it, and when they do, it often proves injurious and hurtful to them. Soft hay of all others, imbibes moiſture the eaſieſt, and retains the effects of it the longeſt, which generally turns it rotten and unwholeſome, and ſo affords but a crude faint nouriſhment, and thoſe Horſes that are forced to feed upon it for want of better, are generally weak and faint, and in time grow diſeaſed if they continue long in the uſe of it. When the graſs has ſtood long on the ground, ſo as to become ſomewhat decay'd at the root, as happens in wet ſeaſons, waiting for fair weather to cut it down, that hay always proves bad, rotten, and full of duſt. When the Feeder can have no better, he ſhould be careful to ſhake the duſt out of it as much as poſſible; for beſides that the duſt is unpleaſant to a Horſe, it is alſo very hurtful, and no kind of diet is more apt to breed vermin. Long hay is more duſty than ſhort, even though it be well got, and ſhould be well ſhook before it is put down into the rack. The ſhort hay is always the beſt, and generally full of ſeed, and needs no preparation; for the hay-ſeed, when ſweet and dry, will never hurt any Horſe, and when it falls into the manger, they will often lick it up, before they begin to eat their hay. This is commonly the produce of dry ſummers, when the hay is always the beſt; but becauſe ſuch ſeaſons yield but very ſhort crops, the hay generally riſes to a very high price, nevertheleſs a little of it goes a great way in feeding.

Hay is a material article in a Horſe's diet, and I have obſerved from experience, that feweſt Horſes fall ſick, or contract evil diſtempers, when the hay is univerſally good.

Oats, their properties.

Oats are the next thing to be conſidered in a Horſe's diet; they are of a middle nature between wheat and barley, and agree perfectly well with our Horſes, and are ſo pleaſant to Horſe's palates, that I never knew any foreign Horſe that had been uſed to barley and other kinds of grain refuſe to eat them. Whereas many of our Horſes will not reliſh barley, unleſs it be ſcalded, or when they are ſuffered to be very hungry, and even then do not eat it with pleaſure. Oats are cleanſing and opening, and inwardly healing, and our Horſes ſeldom receive any damage from their oats, unleſs they be given with too liberal a hand, and then they are looked upon to be heating; beſides, when Horſes have too many oats given them, they are apt to eat little or no hay. But this ſeldom happens, excepting in places where hay is ſcarce, or not good of its kind, and oats plentiful; but Horſes that eat little hay and many oats, tho' their fleſh is generally firm, yet they ſeldom carry any belly, and if they have not a good deal of exerciſe, are apt to fall into fevers, or breed ſurfeits.

The oats are generally good all over *England*, but are beſt in the north parts, for they thrive moſt in cold mooriſh grounds, and in ſome countries are the chief product. Thoſe that have a thin ſhell, and not large and huſky, feel heavy in hand, and rattle when poured into the meaſure, are the beſt. The ſhip oats that come to *Bear-Key*, are chiefly from the northern counties, but are ſometimes muſty and unwholſome, and loſe their whiteneſs by the water-carriage; but when they are put into dry granaries or dry lofts, and ſpread out on the floors, and often turned and ſifted, they frequently recover their ſweetneſs, and may be given with ſafety; yet I ſhould always prefer the freſheſt and neweſt oats, eſpecially to fine Horſes, tho' they may be worſe in kind; and where they abound in huſk there needs no more than to increaſe the allowance. Some prefer the black oats to the white, but I believe the difference is but ſmall, only that in ſome places the black are more firm and hard than the white, and have a thinner ſhell, and in thoſe places they generally ſow a ſuperior number of black oats among the white, though the white that grow up with them are not much, if at all, inferior to the other, which ſhews the difference lies chiefly in the goodneſs of the ſeed and the fitneſs of the ſoil.

Beans, their properties and uſe.

Beans are another part of our Horſe's diet, which, however, are chiefly uſed in mixture with bran or chaff, and by ſome upon the road with oats; but they are moſtly given to Coach-Horſes, and others that are conſtantly in draught. They afford the ſtrongeſt nouriſhment of all other grain, and will enable Horſes to go through a great deal of heavy labour; but in ſome ſeaſons they breed a kind of vermin, which the farmers call a red bug, and is reckoned dangerous, and therefore the beſt way at ſuch times is to have them well dried and ſplit, which may in ſome meaſure deſtroy the malignity that is ingendered in them. I need ſay nothing of peas, which I have known given to working Horſes in places where they grow in great plenty, theſe when they are hard and dry having a near affinity to beans. Neither need I mention pea-ſtraw, or pea-ham, as ſome call it, which the farmers give to their Cart-Horſes, as a refuſe that would lie on their hands, and be fit only for dung if they did not put it to that uſe. The farmers alſo give their Horſes a good deal of chaff among their oats, which is not amiſs when it is ſweet and freſh; but if it happens to

Peas.

be old and muſty, it is apt to breed vermin. And even the beſt chaff when it is given in too great quantity to Horſes that do not work, it makes them grow pot-belly'd, and if long continued, will breed foul Blood and turn them diſeaſed.

Bran, its uſe.

Bran is a uſeful ingredient in a Horſe's diet, if diſcreetly uſed, and when ſcalded is a kind of panada for ſick Horſes. But nothing is worſe than a continued uſe of bran raw or ſcalded, as it is apt to relax and weaken Horſes Bowels too much, and thereby expoſe them to many evils; and I am apt to believe the *Bots* that are ſo troubleſome to many young Horſes, in the months of *May* and *June*, are owing to muſty bran and chaff, with the other foul feeding given to make them up for ſale in the ſpring, and therefore one can never be over careful in feeding with bran, to ſee that it be new and ſweet.

Feeding at Graſs, &c.

The next thing I am to conſider, is the feeding on graſs and other green herbage, of which our grounds afford ſufficient ſtore of various kinds. And this indeed ſeems to be the moſt natural food of Horſes, as well as of many other brute creatures; but by reaſon of the coldneſs of our ſoil and climate, our graſs is not ſo nouriſhing as to ſtrengthen a Horſe for hard labour, without an addition of dry provender. However, moſt of our ſpare Horſes in the country are kept pretty much at graſs, both to ſave charge and trouble, where for moſt part they do pretty well, eſpecially thoſe that are habituated to that kind of living. Many Gentlemen keep their hunters abroad all the year with good ſucceſs, where they have a ſtable in ſome convenient dry field, with hay at all times for them to come to when they pleaſe, and where they can ſhelter themſelves from the inclemency of the weather. Theſe Horſes are ſeldom ſick or diſeaſed, and as they move and reſt themſelves at pleaſure, ſo their limbs are always clean and dry, and with a feed or two of corn, do their mornings work, and go thro' a chaſe as well, and frequently better than thoſe that are kept conſtantly in the houſe, and have a great deal of airing and dreſſing beſtowed on them.

Our farmers alſo keep moſt of their Horſes abroad in the winter, where they take their chance till the froſt and ſnows comes on, or when the weather happens to be very rainy that the grounds grow potchy, and then they fodder them in their yards or near their houſes, ſo as they can come into the ſtables or under ſhades which ſome build for the conveniency of their cattle.

But thoſe who have not ſuch conveniencies of their own ought to be at ſome pains in procuring graſs for their Horſes, and proper places for them to run in the winter; when they have no uſe for them, eſpecially ſuch as live in *London* or other great towns, that the graſs be ſweet; for rank ſour graſs is rather worſe than the hay that comes off the ſame ground, provided it happens to be well got, and in a good ſeaſon, the viſcid moiſture and other qualities that are noxious in the herb being in ſome meaſure evaporated, or according to the vulgar phraſe, ſweat-

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The properties of graſs.

ed out in drying. That graſs is always reckoned the beſt which is ſhort, thick, and on dry but on fertile ground, that needs little manure, eſpecially ſuch as has always been made uſe of only as paſture, and has little or no other dunging, but what the animals themſelves leave upon it. Therefore moſt Horſes thrive better on commons, or on the graſs that grows near commons, than on meadows that have been often mowed, and have had great crops of hay taken off them from time to time; and therefore muſt either be manured or ſowed afreſh with clover. For though Horſes will grow fat upon ſuch grounds when they have good water; yet they are not apt to hold their fleſh nor to ſtand ſo well afterwards, unleſs in very dry ſeaſons, when they feed altogether on the root, on which bare paſture Horſes will grow extremely fat, as I have often obſerved. For the roots of moſt kinds of graſs are extremely cooling and agreeable to the conſtitutions of Horſes, and have more of a diuretick quality than the herb.

The fields which lie near great towns and are much dunged, cannot be ſo well recommended either for hay or paſture, as thoſe that lie more in the country and are not ſo much forc'd, nor ſo much exhauſted with heavy crops: and I have often obſerved where the grounds are naturally poor, that tho' the loads of dung will make them yield a plentiful crop to the owner, yet it often proves injurious to the Horſes that feed upon them, eſpecially if they go the whole ſummer. For in the ſpring the graſs is more tender and full of ſap than afterwards, and riſes in ſuch plenty that they can eaſily pick what they like beſt, without receiving much damage, if any; but afterwards, when they come to have leſs choice, and are forced to take up with what they can find, many of them decline and grow pot-belly'd; and theſe effects are always the moſt manifeſt where the ground is naturally poor and barren, and has been newly manured with dung. A poor ſoil that has been much impoveriſhed, and produces nothing but what has been forced, contracts a kind of diſtemper or diſeaſedneſs, and may be fitly compared to a man or any other animal, that becomes ſick and ſurfeited with great meals, after he has been a long time half ſtarved. For in many things there is a near affinity between the earth and the vegetables that grow upon it, with the bodies of animals.

I knew a conſiderable graſs-farm that had been many years neglected, firſt by the tenant, and afterwards by one who was entruſted by the landlord to look after it, whereby the ground, which was naturally poor, became ſo barren, that it produced little or nothing but moſs, and was grown ſo bare in places, that the ſtones and gravel appeared on the ſurface when the graſs was fit to be cut down. While the ground was in this poor condition, above forty Troop-Horſes with which I was concerned, fed upon the aftermaſh two ſummers with very good ſucceſs. The third year the farm fell into the hands of a more diligent and induſtrious perſon, who loaded it with dung, which he procured in great plenty from *London*. About the ſame number were ſent that year alſo as ſoon as the aftermaſh was ready, and the firſt time I went to ſee the Horſes there I obſerved a very great increaſe of graſs, but it looked patched in many places, of different colours, ſome yellow, ſome of a very deep green, and ſome blackiſh, occaſioned by the dung which had been laid on in great quantities, and was not ſufficiently incorporated and imbodied with the earth, like a ſurfeited carcaſe broke out in boils and ſores. Many of the Horſes, after their purgation, grew pot-belly'd, which gave me ſome apprehenſion of danger, and in a little while after two of them were ſent home ſick, notwithſtanding all imaginable precautions were uſed to prevent it, by plentiful bleeding; but after the *September* rains, that the young aftermaſh graſs ſprung up in great plenty, ſeveral more Horſes were ſeized with the Yellows and other bad ſymptoms, which obliged us to bring them all home very ſuddenly; notwithſtanding which many of them fell ſick the following winter, while thoſe that had been upon duty and had not been abroad at graſs, continued perfectly well. And thus we may gather from examples of this kind, that in grazing Horſes the pooreſt ground will, if it be of a kindly ſort, produce wholeſome nouriſhment, by which they will thrive better than on the richeſt ſoil; eſpecially when it is made ſo by mens induſtry, to produce large and plentiful crops.

Many Horſes are alſo injured by running at graſs upon cold clay grounds, of which I have met with frequent inſtances; for though theſe may afford plenty of graſs, and need but little manure, yet that graſs is not very agreeable to Horſes that have not been accuſtomed to ſuch kind of paſture; tho' the hay that grows upon clay grounds is oftentimes very good and wholeſome, eſpecially when the clay is not too ſtrong, and when there has been ſome froſty ſeaſons to mellow it. But if Horſes are turned out upon the clay, they ought by no means to run late in the year, but ſhould be taken up before the latter rains; for unleſs they be uncommonly hardy, they may receive great damage, becauſe the water never ſinks deep enough in the winter on ſuch grounds, but is apt to lodge too much on the ſurface, ſo that the Horſes that feed on theſe in the ſhort days lie extremely wet; and indeed the clay is ſo injurious to ſome Horſes, that I have known them ſuffer greatly, notwithſtanding they were conſtantly taken up in the night, and brought into the houſe.

The ſalt marſhes.

The ſalt marſhes along the river *Thames* are certainly as good paſture for Horſes as any we have about *London*, where many run all the year round with good ſucceſs in open ſeaſons, of which I have had ſufficient experience; and this I think is the ſureſt rule to go by. Tho' the air that comes off the marſhes is very injurious to human conſtitutions, and ſubjects them to annual returns of the ague, and ſometimes to palſies; yet it has no ſuch effect upon the brute creatures that feed on them, which may be owing to the diuretick quality of the ſalts, with which that graſs is more or leſs impregnated as the tides riſe higher or lower upon them. The marſh ſoil is for the moſt part a compoſition of a very fine light mold, mixed with ſand, covered all over with a fine trefoil, which ſows itſelf and grows extremly thick in ſome places, as we ſee it on ſome parts of our fineſt commons. If the rains fall never ſo heavy, the ground being open drinks it up immediately; ſo that the cattle always lie dry upon it, even in winter, when moſt other place are potchy, which is one of the greateſt benefits of all others to Horſes at graſs. They purge more there, both by dung and urine, than on any other paſture, and afterwards take on a firmer fleſh; ſo that thoſe who ſend their Horſes there only to cleanſe them, and after purging remove them to other paſtures, unleſs it be for ſome particular conveniency, are greatly miſtaken; for I have known ſeveral Horſes run there ſummer and winter, and as few accidents happen to them as any where elſe. Four and twenty hours conſtant rain in the graſs ſeaſon will often bring up graſs in the marſhes, unleſs the weather be extremely cold. And Horſes often grow fat on the beſt marſhes, when they are eat ſo bare, or burnt up in dry weather, that ſcarce any graſs is to be ſeen on them. In winter ſome never houſe them, but let them run abroad and take their chance in the open fields, where there are neither trees nor hedges to cover them, and yet they ſeldom ſuffer any thing from the extremity of the weather; and unleſs the ground be covered deep with ſnow, they allow them no dry forage, and will for the moſt part be found in good caſe, even in the months of *December* and *January*, when they have nothing to feed on but the roots.

All the water they have to drink is for the moſt part brackiſh, which at firſt is not very agreeable to Horſes that have not been uſed to it, but afterwards they come to reliſh it as well as any other. The greateſt danger on the marſh grounds is from the deep ditches made to run off the ſpring tides, ſome of which have their bottoms full of a kind of loom ingendered by the weed, which comes into them in great plenty at high-water. And if a Horſe that is a ſtranger to theſe grounds, happens in leaping or any other way to ſtep into one of them, he may run the hazard of being loſt, unleſs he be diſcovered in time. Sometimes Horſes have been waſhed away with the ſpring tides, by going too near the dykes; but theſe accidents ſeldom happen, not only becauſe the marſh-men are always upon the watch at ſuch times, but moſt Horſes have generally ſo much ſagacity that themſelves are ſoon aware of the danger, and will very carefully avoid it.

But though we have perhaps the greateſt variety of food for our Horſes of all kinds both of graſs and dry meat, and in the greateſt plenty that is to be met with any where, nevertheleſs many are but indifferent managers in diſpenſing it, for want of ſufficient knowledge and experience in ſuch matters. And therefore I ſhall lay down ſome general rules which may be of uſe to preſerve our Horſes from ſickneſs and accidents, and ſhall at the ſame time go as far into particulars as the nature of the ſubject, and the deſign of this Eſſay will allow. Wherein I pay the greateſt deference to thoſe Gentlemen who in a particular manner take pleaſure in their Horſes, and viſit them often in their ſtables, and direct their feeding and exerciſe with great ſkill and judgment; whereof I have frequently had opportunities of being myſelf an eye-witneſs, and have learned many things of them which I doubt not will make what I have to advance on this ſubject the more uſeful to the publick.

Directions concerning feeding in the houſe.

Now as to the exact quantity of hay and corn which is to be given to any Horſe, that cannot be certainly aſcertained; but every man muſt uſe his own diſcretion, as he finds what the conſtitution of his Horſe will bear. For ſome Horſes are much better feeders than others, and at the ſame time require more food: Other great feeders muſt be ſtinted in their diet, when it only produces a bad Blood, and fills them full of humors, or endangers their Wind. Horſes require leſs food when they ſtand in the ſtable, as happens ſometimes in bad weather, without exerciſe, or when Horſes have but little Exerciſe; and it ought to be a conſtant rule, to feed Horſes in proportion to the work and ſervices required of them: And therefore all Hunters, Coach-Horſes, and Horſes that are much upon the Road, or work hard in any kind of drudgery, ſhould be well fed, otherwiſe it is impoſſible they can go through their buſineſs to the owners ſatisfaction.

Horſes that mangle their Hay.

When a Horſe mangles and leaves his hay, and yet has no manifeſt ſigns of ſickneſs, that generally happens, either from his having too much hay given him, or too much corn, which kind of management makes ſome Horſes loath their hay; and therefore, when that is the caſe, his corn ſhould be abridg'd, neither ſhould his allowance of hay be augmented, till he recovers his appetite, otherwiſe he will by degrees fall ſo far off his Stomach, that he will loſe his Belly, and look miſerably, and nothing will recover him but graſs, or ſome other change of diet.

Young Horſes of ſtrong craving Appetites how to be managed

Young Horſes that have ſtrong appetites, and have not done growing, ſhould be indulged more in their feeding than thoſe that are come to their full growth and maturity; and if their Exerciſe be but little, ſo as to oblige their Diet to be leſſened, in that caſe, it will be convenient to lay a little ſweet ſtraw before them often, for a young Horſe that has a craving appetite, is never eaſy to ſtand to an empty rack, but will always be in ſome miſchief, either intangling himſelf in his collar, or kicking againſt the ſtall, or againſt the poſts, and ſome are continually nibbling the rack and manger, and in the end turn Crib-biters, which is as bad a miſchance as can befall a Horſe. This ſeldom happens but to Horſes that ſtand idle, while they are breeding their Teeth; working is the beſt thing to prevent it, but where Horſes have but little work, which is often the caſe of Troop-Horſes, and ſome Coach-Horſes, I ſhould adviſe them to have a little freſh ſtraw conſtantly in their racks, when they have eat up their allowance of hay, and ſometimes to be ſtrap'd back, to keep them from this ugly trick, which at laſt grows into an incurable habit.

The advantages of Exerciſe.

But Exerciſe duly given to Horſes that are well fed, is not only the beſt means of all others, to prevent ill habits, but to preſerve them in a perfect ſtate of health: For Exerciſe converts the food into good and wholeſome nouriſhment, it promotes the circulation of the Blood, and all the glandular diſcharges, ſo as greatly to enliven the Body, and to make way for freſh ſupplies of aliment. It invigorates the ſpirits, gives ſtrength and firmneſs to the Muſcles and Sinews, and enables a Horſe to endure labour. And when Exerciſe is given abroad, in an open free air, it adds greatly to a Horſe's vigor, and prevents any diſpoſition to putrid coheſions in the Blood, which a cloſe ſtagnated air often produce, and this eſpecially when Horſes are young, and their appetites ſtrong; for indeed when Horſes grow old, their appetites are more moderate, and reſt is oftentimes more agreeable to them than labour. Nevertheleſs, exerciſe is, more or leſs, abſolutely neceſſary for all Horſes, young or old: for we may obſerve, even old Horſes, when they lye much ſtill, tho' they are not apt, as young Horſes, to turn directly ſick, and fall into Fevers; yet as their Blood grows poor, and languid with age, they become ſubject to many infirmities, as ſwellings of their Sheaths and Bellies, with other dropſical ſymptoms, and ſometimes to obſtinate eruptions on their Skins, which Exerciſe in a proper degree often prevents.

Horſes, by their natural activity, are every way ſuited to exerciſe and labour, and in that reſpect are more uſeful than any other of the brute creatures; only it depends on us, how they are to be treated, both for their own preſervation, and our benefit. I have already obſerved, that a Horſe's food, ought always to be proportioned to his Exerciſe. But the time and manner of his Exerciſe is alſo to be regarded, for if a Horſe happens, either to be work'd at an unſeaſonable time, or beyond his ſtrength, it will be more injurious to him than if he had not been work'd at all. Therefore this general caution is always needful, *viz.* never to ride a Horſe hard, or put him upon any violent exerciſe, when he has been newly fed, and has had his Bellyfull of meat or water, but ſhould be mov'd out at firſt gently, and he will naturally mend his pace, as his food and water begins to aſſwage, when his rider may urge him on to further ſpeed, as his buſineſs may require.

The right time and manner of Exerciſe.

I need not tell any one, that when a Horſe is hot with riding, or any other ſharp laborious Exerciſe, he ſhould be cool'd by degrees, this being known to almoſt every ſtable boy, from cuſtom and uſe, tho' it is often neglected, through ignorance or idleneſs, or done with little judgment. And therefore, when a Man has travelled hard upon a journey, or when Horſes have been driven hard in a coach or chaiſe, it is not ſufficient, after they come to their bating place, or to the end of their day's journey, to walk them about in hand for half an hour or more, which is uſually done, but their pace ſhould alſo be ſlackened for a mile or two before they come in, and after that, ſhould be alſo walk'd ſome time in hand, that they may cool gradually before they are brought into the ſtable, with a thin cloth laid over each, if they have been uſed to it. This is the ſafeſt way with young Horſes, that have been kept well, and have work'd but little. And when ſuch Horſes come late to the end of their day's journey, or when the weather is ſo bad, that they cannot be walk'd about in hand, they ſhould then be well rub'd all over their Bodies and Limbs, till they are quite cool, without taking off their harneſs and ſaddles, and then cloathed, for when all the ſmalleſt Blood-veſſels are replete and full, as they muſt unavoiably be in all ſtrong, and eſpecially in long continued Exerciſe, and the Blood extremely heated, and running like a torrent, any ſudden chill or damp will produce ſtoppages and obſtructions, where the veſſels are the moſt minute and ſmall, or wherever there is the greateſt weakneſs and relaxation, ſometimes inwardly in the Lungs, ſometimes in the Liver and Kidneys, and ſometimes in the Stomach and Guts, and other membranous parts; and this is uſually followed with inward pain, and inflammation, or with great dulneſs and heavineſs, which in the end, often produce many untoward diſorders; or if the Limbs happens to be weak and relaxed, the Blood and Juices will ſoon drop down and ſtagnate there, ſo as to produce Swellings, and ſometimes Ulcerations, that are troubleſome enough to remove, eſpecially in thoſe that have been little accuſtomed to ſuch kind of labour;

How Horſes are to be managed in Hunting and on the Road.

for habit and uſe, in continued Exerciſe, alters the caſe very much, becauſe that ſtrengthens and invigorates the Nerves and Sinews, as we may obſerve in ſome hackney or job Horſes, which are ſo ſeaſon'd to their work, that ſcarce any thing can hurt them. Indeed ſome of the job Horſes, that we ſee indure ſo much labour, are naturally ſtrong, and very hardy, and have at firſt been carefully managed by their owners, who are not able to bear the loſs of cattle, as Gentlemen or Men of fortune; and therefore we ſee them generally, both begin and end their work with great coolneſs, and when they chance to meet with Horſes that they find unable to go thro' their hard work, they uſually make their buſineſs only a meer play, that they may not loſe their Fleſh, until they can diſpoſe of them to the beſt advantage.

Another neceſſary caution for the preſervation of our Horſes, is never to feed them too ſoon, after they have been heated with Exerciſe; for as to water, I believe I need give no precautions about it, becauſe few are ſo ignorant as to give Horſes water while they are hot; nay, ſome are ſo fearful in this reſpect, that though they travel gently, and continue ſeveral Hours upon the road, yet will never ſuffer their Horſes to cool their Mouths, if they are never ſo much parched and dry; which is a great miſtake, becauſe Horſes that travel or work but gently, may be indulged with water at any convenient place, and often ſuffer for the want of it. But with reſpect to feeding Horſes when they are hot, it ſhould be conſidered, that the Blood-veſſels of the Stomach are then replete and full, and oftentimes heated and inflam'd, and requires ſome time, before a Horſe is in the capacity to receive food, without being injured by it. And I believe moſt Men of weak digeſtions may experience ſomething of this in themſelves, that when they have been over-heated, they have no great inclination to eat, until they grow cool; and if they happen to eat before, they will be the worſe for it. And I have obſerved the very ſame difference in Horſes, tho' in ſome much more than others; and therefore, in all ſuch caſes, ſhould have nothing at firſt but clean hay, given them by handfuls, and at proper intervals, until they are perfectly cool, and then may have both their water and meat in ſufficient quantity; only with this caution, that if they are to travel further the ſame day, their feeds ſhould be but ſmall, and at night a full feed given at twice, which every one will find by experience the beſt way, to go thro' their work with ſafety.

The method uſually made uſe of in feeding Coach-Horſes upon the road, by giving them bran, with a few beans, before their oats, is not at all amiſs, becauſe their work makes them perſpire ſo very much, that without ſomething of this kind, they would be faint, or apt to grow coſtive in long journeys, which would be injurious to them. The bran keeps their bodies open, and the beans is a ſtay, to keep the bran from ſcouring, which is another extreme Horſes of weak Bowels are apt to be ſubject to on a journey, and is no leſs injurious than Coſtiveneſs; but then care ſhould be taken, that the bran be freſh, and the beans old, for nothing will ſurfeit more than muſty bran and new beans; neither ſhould the beans be given too liberally, but only as a corrector of the bran, to make it leſs ſlippery.

Habits to be broke gradually.

Moreover, Horſes that have not been much accuſtomed to labour, ſhould be led on to it gradually, for habits can ſeldom be broke off abruptly, but by degrees; and this caution is the more neceſſary, becauſe when Horſes have had but little Exerciſe, they are apt to increaſe in Fleſh; though their feeding be but moderate, yet their Fleſh is for the moſt part, but looſe and flabby; and if a Horſe in this condition, while his Veſſels are relaxed, ſhould be hard-work'd, it would be the more dangerous, becauſe the Blood at that time muſt have acquired a great degree of viſcidity, ſo as to render it unfit to paſs through the ſmall Veſſels, which muſt therefore be diſtended, and the ſecretions thereby greatly obſtructed, and prove the cauſe of many obſtinate diſtempers; and when theſe Horſes have Blood taken from them, it is generally of ſuch a texture and complexion, as ſhews their dangerous ſtate conſiſting for the moſt part of a yellow viſcid ſize, or of a florid high colour, extremely thick, without a due proportion of *Serum*, and ſometimes black and grumy, which upon ſudden briſk exerciſe, expoſes Horſes to Fevers, with inward pain and inflammation, that unleſs uncommon means be uſed, will end in putrefaction, which accidents I have frequently known happen to young Horſes, that were put to buſineſs without due preparation.

And here it may be further obſerved, that the longer any Horſe has been without Exerciſe, the more time ſhould be allowed to prepare him for buſineſs, becauſe the longer a Horſe has been kept in indolence, his Veſſels become the more relaxed, the ſpringineſs and tone of the Muſcles more debilitated and weakned; ſo that if he eſcapes a Fever, or other acute diſtemper, yet any ſudden exerciſe in ſuch a ſtate, often induces pain and wearineſs in the Shoulders, Hips, Limbs, and other parts adapted to motion; and this is generally more or leſs in proportion to the time he has been kept in an unactive ſtate, or according as his particular make and diſpoſition, may render him more or leſs ſuſceptible of injuries, from a depraved, ſluggiſh, or too rich a Blood. Many inſtances there are of this kind, eſpecially of Horſes newly come out of the dealers hands, which are oftentimes long in the keeping of country Jockies, before they are brought to *London*, and ſo extremely fed there, where all things are cheap, that many of them require a great deal of management, before they can be put to any uſe. For though our dealers here in *London* give them a few gallops, backwards and forwards, in their own rides upon litter, yet this is but ſmall, and no ways proportioned to their food, which they diſpence with a liberal hand, to keep them in ſuch order, as to render them the more ſaleable; ſo that too much exerciſe, if they had proper conveniencies, and hands to do it, would by no means anſwer their end. And therefore when a Horſe newly bought from

Horſes newly brought from the dealers, how to be managed.

from a dealer, or any other that has been kept a long time without ſufficient Exerciſe, is to be put upon buſineſs, ſome proper preparation ſhould be made for it, which ought to be ſo accommodated, as the circumſtances of time and place and other requiſites will allow.

The difference of Conſtitution to be regarded.

Now it muſt obſerved by the way, that the difference of conſtitution in Horſes, may render the time of preparation for buſineſs much ſhorter in ſome than others. For ſome Horſes are ſo extremely hardy, that ſcarce any error in the way of feeding, or any miſmanagement or neglect in other reſpects, will hurt them. We ſometimes meet with a Horſe that has ſtood a whole winter in the ſtable at full feed, and in all that time has ſcarce travelled further than the water trough, go all of a ſudden into other hands, who have put him immediately upon very hard ſervice, without any accident, or perhaps the leaſt failure in the accompliſhment of his work, or ſuffering any damage by it afterwards. And ſometimes we meet with inſtances of Horſes newly taken up from winter graſs or other foggy diet, perform a journey well, or even go a-hunting, without any preparation. But theſe inſtances are very rare, and ſeldom or never to be met with among the fineſt of our bred Horſes that derive their Blood originally from a warmer climate, and have more of delicacy than moſt of our common Horſes. We may alſo obſerve, even among our bred Horſes, that ſome of them require leſs preparation to fit them for buſineſs than others. But as it is impoſſible the bottom'd goodneſs of any Horſe can be perfectly known without a ſufficient trial, and as this may alſo be uncertain, becauſe ſickneſs and unforeſeen accidents may alter and change the radical conſtitution of any Horſe, therefore the ſureſt way is never to venture upon any laborious buſineſs until he has been thoroughly ſeaſoned with ſolid food and conſtant exerciſe.

Moſt of the Horſes that are fed for ſale have the interſtices of their Muſcles ſo filled with fat, that their true ſhapes can hardly be known. The *Membrana Adipoſa*, that lies immediately under the ſkin, makes a cover of fat over the whole, which gives ſome Horſes almoſt the ſame feeling as a dropſical body, ſoft and ſometimes yielding and giving way to the preſſure of the hand; and theſe Horſes to a critical Eye have frequently no other beauty than a fine coat, which the exuberance of oily fat under the ſkin, warm cloathing, and a hot ſtable, cauſes to look ſmooth and gloſſy; whereas the true beauty and vigor of a Horſe ſhews itſelf in nothing more than in the diſtinctneſs of his Muſcles, when they appear in action, and the cleanneſs and drineſs of his Limbs, which is greatly loſt when he is blown up with fat. This treatment cauſes many Horſes to miſcarry when they come into buſineſs, and greatly diſappoints the expectation of the purchaſers, for if a Horſe in this condition is not carefully managed, he may eaſily be ruined. For this of itſelf is a kind of morbid ſtate, which requires great judgment and time before it can be altered.

Why ſo many Horſes miſcarry when they come firſt into buſineſs.

When a Horſe is juſt come out of the hands of a dealer; or if he has ſtood long in a ſtable eating full meals, and grown fat for want of exerciſe, he ſhould at firſt be very gently uſed. For when Exerciſe is ſuddenly attempted while a Horſe is in this plethorick, and indeed, morbid ſtate, it inflames his Blood, and, to make uſe of the common phraſe, diſturbs all the humours; and therefore the firſt thing I would adviſe ſhould be bleeding and lowering his diet, which however ſhould not be ſo much abated as ſome imagine, for a Horſe may ſuffer as readily by too great and ſudden diminution of his food, as by an increaſe of it, eſpecially the weaker and more delicate ſort. Walking exerciſe is the moſt proper to begin with, and this ſhould be in the open air in good weather, for Horſes that have been kept long in a hot ſtable, cloathed and high fed, are very unable to endure the rain, but for the moſt part catch inveterate colds when they go out in wet weather, a thing I have often obſerved; and for the ſame reaſon their ſtable ſhould at firſt be moderately warm, and their cloathing leſſened by degrees; and for want of theſe cautions many Horſes ſoon begin to look very miſerable after they come out of the hands of their kindeſt maſters, who fill their Bellies, keep them in double cloathing in very hot ſtables, and above all, girt as cloſe as they can bear round their bellies with broad ſurcingles, and never ſuffered to breathe any air but their own hot ſteam, and the ſteams that come from other Horſes.

Exerciſe after bleeding neceſſary.

This renders it abſolutely neceſſary to take ſuch Horſes into the air, and at the ſame time

Exerciſe in the open air of great ſervice.

to be careful that they may not catch cold. They ſhould be walked in it at leaſt two hours on a day, and the further they are carried from home in that time the better. After a week or a fortnight a Horſe may be walked out twice a day, if the days are of ſufficient length, two hours in the morning and two hours in the afternoon; and as his ſpirit and vigour increaſes, ſo his exerciſe may alſo be increaſed, and the further he is carried from home, the greater benefit he will receive from the air; and after he has been about a month under this uſage, it will be proper to repeat the bleeding to cool his body, and to give him a feed of ſcalded bran two or three times a week, to keep him from growing coſtive, and if he refuſes to eat it ſcalded, which ſome Horſes do that have been much cloyed with hot meat, it may be given raw and mixed with his oats.

Signs of thriving and amendment.

It is always a good ſign of amendment in the habit or conſtitution of a Horſe, when his thirſt and craving after water abates, for moſt Horſes that have been in good keeping, with little Exerciſe, are always thirſty when they come firſt into buſineſs; for while their Blood is thick and ſizy, their mouths are dry and clammy, and their ſecretions very imperfect; and a good way to prevent this and many other accidents is to feed early, that he may ſtand ſome time to an empty rack, or upon his bit, before he is taken abroad, that both his hay and his corn may in ſome degree be digeſted; for many Horſes, when they are newly fed, crave after water as ſoon as they go out, though they have been watered before in the ſtable; but as this diſpoſition abates, it is a ſign the conſtitution mends.

Another good ſign of a Horſe's thriving is, when his ſweating abates; for every one knows that a foul Horſe will ſweat upon the leaſt Exerciſe, and oftentimes ſtanding at reſt in his ſtall; but when the ſweating abates, or does not turn white like a ſoap-lather, but runs off like water, it is generally a ſure ſign that his Blood and Juices are mended, for a thick viſcid Blood always produces a clammy and frothy ſweat. When a Horſe's coat lies cloſe and ſhines, when his Legs keep clean and do not ſwell in the ſtable, when his Limbs always feel cool and firm, when he feeds heartily, when he lies down and riſes with a good ſpring, when he ſtretches and ſhakes himſelf; theſe are all ſigns of health and vigour, ſo that his Exerciſe may be ſtill encreaſed, and at the ſame time he may be indulged in a more liberal diet.

The uſual accidents that happen after full feeding and want of Exerciſe.

But after all, ſome of theſe Horſes are much more difficult to be ſeaſoned and rendered fit for buſineſs than others; ſome have been ſo much glutted with food, and have been ſo long in the dealer's hands, that all the care and management in the world proves inſufficient to bring them to any tolerable appetite, and while a Horſe continues in this manner he is fit for no kind of uſe. Others will feed heartily on all that comes before them, but by reaſon of the extreme ſizineſs and other diſorders of their Blood fall lame, even in the mildeſt and gentleſt Exerciſe. And this is that ſort of lameneſs which is ſaid to proceed from humours, and comes inſenſibly without any ſtrain or violence. Both theſe kinds of Horſes will continue to ſweat very much with their Exerciſe, the latter by reaſon of pain in his Joints and Muſcles, and the former from meer debility and weakneſs. Theſe are caſes which often require purging and other evacuations; but this ſhould never be gone about until the heat and inflammation of their Blood, proceeding from their previous high keeping, is abated; after which it may be done with great ſafety, and often with good ſucceſs, except where the caſe is extremely obſtinate indeed. A poor feeder ſhould have his phyſick exceeding mild, and ſuch as will not inflame but cool the Body, and likewiſe ſtrengthen the ſolids, which in ſuch a ſtate are greatly relaxed, and at the ſame time may carry off the ſlime and crudities of the Stomach and Bowels, which weakens digeſtion, and by that means tranſmits a crude nouriſhment into the Blood. But where a Horſe at the ſame time he feeds well is ſubject to lameneſs that moves from one part to another, his phyſick may be made of ſufficient ſtrength to reach the obſtructions of the remoteſt parts. And indeed, I ſhould readily adviſe purging moſt Horſes that come out of the dealers hands, as ſoon as the effects of their groſs feeding is ſomewhat carried off with bleeding, a lower diet, and moderate exerciſe; for till then purges are apt to inflame their Blood, and create many other untowardly diſorders. For the ſame reaſon, I ſhould never adviſe any one who buys a fine Horſe from a dealer, to ſend

The neceſſity of purging in ſuch caſes.

him directly to the riding-houſe to be loonged and put upon his haunches, until he has been cleanſed and ſeaſoned; for though ſome very hardy Horſes will go through this labour without any preparation, eſpecially when they meet with gentle uſage; yet I have known others that have been hurt by it, and render'd incurably lame.

How to be managed when they catch cold.

We often find Horſes at firſt catch very obſtinate Colds, which pull them down and hinder their thriving, and the longer they have been in the dealers hands, the greater is their danger. I have already hinted at the reaſon why theſe are ſo much expoſed more than others to catch ſuch inveterate colds, and no one can be a ſtranger to this who has been in the dealers ſtables, and are any ways acquainted with horſe-keeping, who cannot but obſerve how hot their ſtables are, and what addition they make to this heat by their exceſſive and unmerciful cloathing, and their manner of girding their Bodies with broad ſurcingles to make them belly well, or let down their Bellies, as they term it, which artifice greatly expoſes ſuch Horſes to Colds, and to many other miſchiefs whenever they come into different keeping; and therefore this one caution may be again repeated, not to abate their cloathing too ſuddenly, but by degrees, to keep them at firſt with a double ſurcingle, but not to be bound tight, and ſo by degrees to a ſingle one; for a Belly that is increaſed by bandage, however well it may look to the eye for the preſent, can be no benefit but a detriment to the Horſe, for which I could give demonſtrative reaſons from the animal ſtructure and œconomy.

Horſes newly bought of the dealers ſhould alſo be put into warm ſtables, in ſtandings that have not lain empty, but where other ſound Horſes have ſtood, which is the beſt airing of all others for Horſes apartments. And this caution is the more neceſſary, becauſe the Colds that ariſe from ſuch extremes are very apt to produce Fevers of the worſt kind, and to leave ſome taint behind them, even when their Fevers go off, unleſs where they are managed with more ſkill and judgment than what is uſual, and are afterwards forced to be turned to graſs to have a long run there, before they are fit for any uſe.

A ſummers run at graſs ſometimes neceſſary.

This leads me to take notice of the advantages Horſes receive from graſs, and to ſhew which are the Horſes that ſtand moſt in need of it, and are moſt likely to receive benefit from it. And firſt of all ſuch as have ſtood long in the Houſe glutted with food, ſuffocated with heat and want of air, and enervated for want of Exerciſe, tho' they be clean fed, yet they are apt to grow ſo full of humours, that they require to run a conſiderable time abroad at graſs to cleanſe them, before they are fit for buſineſs; and indeed, graſs is a vaſt benefit to them, as it is their moſt natural food. And when Horſes do not thrive at graſs, it is often owing to ſome miſmanagement, ſuch as turning them out of a hot ſtable apruptly, about the latter end of *March*, or the beginning of *April*, in the ſharp eaſterly winds, or in the latter end of the year when the nights grow long, and the heavy rains begin to fall. I have known ſeveral Horſes ſuffer from theſe errors: and when it is ſo, the only remedy is to continue them abroad; for what damage they receive from the cold in the ſpring, generally wears off when the young graſs comes up in plenty, and the weather grows warm. And as for thoſe that go out in the latter part of the year, they ſhould always be ſent where the grounds are dry, and where they have ſtables or ſome other good ſhelter from the weather. I only mention this to thoſe who are unacquainted with ſuch things. And I would adviſe thoſe who have fine Horſes that have ſtood all the winter cloathed and well fed in a warm ſtable, not to turn them out too early, for though we daily ſee coarſe plain Horſes turned out to graſs at all times, without any care or concern in the owners, and come to no hurt; yet it often happens otherwiſe to fine Horſes that have been delicately kept, and therefore theſe ſhould always be prepared for graſs firſt, by leaving off their cloathing gradually, giving them more air in their ſtandings, walking them often abroad, or ſuffering them to lie on their wet litter, and at the ſame time lowering their diet and feeding only with hay; and where there is not ſufficient time for preparation, two or three purges may be given; only in this caſe let the Horſes have ſome reſpite after them, before they are turned out, for Horſes that are ſomewhat reduced in their Fleſh always thrive better than thoſe that are turned out fat and full of Blood.

The ſalt marſhes often the moſt proper.

I have already taken notice, that the beſt graſs we have for rectifying the conſtitutions of Horſes, is the ſalt marſhes, and tho' indeed we have ſome inſtances of Horſes that have ſoon died there, theſe are but few, and no wonder, conſidering many are carried there, as conſumptive people are ſent to the Grável Pits, when all expectations from the common means are laid aſide. Nevertheleſs great numbers of Horſes recover in the marſhes beyond all expectation, in chronical diſtempers, eſpecially where their vitals happens to be ſound, or but little tainted. And I may venture to ſay, when a diſtemper'd Horſe dies ſuddenly at the marſhes, it is a good riddance to the owner. Thoſe who have not the conveniency of the marſhes, may turn their Horſes out upon ſome other good paſture, in a moderately warm ſoil, where the graſs is fine, and has never been forced with dung, or other unkindly manure, and where there is good water and proper ſhelter.

I need not mention thoſe Horſes that are turned out to graſs meerly for conveniency, or to ſave the charge of keeping them in the houſe, as we may ſuppoſe ſuch either to be of no great value, or to have no diſtemper that abſolutely requires it, my buſineſs being chiefly with Horſes that have either ſome diſorder actually begun, or are in danger of ſome diſorder coming upon them.

When a Horſe has been carefully looked after both in his Feeding, Exerciſe and Dreſſing, has had good hay and corn without exceſs, his Exerciſe regular, and conſtant care in giving his water, with all the other requiſites for preſerving him in good health; yet if after all this he falls off his Stomach, and continues ſo for ſome time, without amendment, but rather declines even when he has had purges and other helps to make him thrive, it is a ſign of ſome latent diſtemper; and if it cannot be diſcovered by any appearances in the dung or urine, or other uſual prognoſticks, which a knowing perſon may ſometimes do, then the beſt way is to turn him out to the ſpring graſs as ſoon as the weather is favourable; for Horſes in this condition often come to their Stomachs, and feed well, after they have been purged and ſcoured at graſs, when no other method will prevail.

The ſigns that uſually require graſs.

Many Horſes, though they are no ways ſick or diſtempered, yet give plain and viſible ſigns of their want of graſs. Theſe feel parched and dry in the graſs ſeaſon, and uſually mangle their hay, and as often as they are carried abroad always turn their eyes towards the green fields, even ſo as to be ſometimes troubleſome to the rider, by their continual craving after them; but none are ſo apt to crave after graſs in this manner, as the Horſes newly come out of the country that have been uſed to it every ſeaſon, and unleſs they have a good deal of exerciſe and riding to break off this habit, will pine very much for the want of it. And therefore the beſt way to prevent Fevers and other ſuch like accidents, which this longing ſometimes brings, is to allow them a month's running. I only mention this advice to thoſe that live altogether in town, who may turn their Horſes out ſomewhere near at hand, whence they may be taken up at pleaſure to ride ſhort journeys, and by that means be no ways deprived of the uſe of them.

Horſes that have been very hard worked on the road, or in any other laborious exerciſe, ſometimes ſtand in great need of graſs; for we often find Horſes after ſuch uſage grow ſtiff in their limbs, breed Wingalls, with ſwelled Legs, ſtaring Coats, and ſeveral other ſymptoms of approaching complaints, which may be better remedied by running abroad than in the houſe. And ſome of theſe may require it longer than others, according to the degree of injury they have received, or according to the nature of their conſtitutions, or the ſoil they go into. In all which caſes reſt and eaſe in the open air, with their cooling diet, is greatly beneficial.

Horſes that are of a right mould to carry Fleſh, and are paſt growing, which yet do not thrive in the houſe, may be ſuſpected to have ſome beginning diſorder, and therefore do beſt at graſs; where I have known ſuch Horſes often recover, both to look well and to do good ſervice. And I need not ſay how neceſſary graſs is to Horſes that have a ſurfeited look, eſpecially thoſe that do not ſhed their coats in a kindly manner, or in the proper ſeaſon; which, if it is not owing to ſome inward complaint, yet at leaſt it diſcovers a cutaneous diſorder, that requires te be ſpeedily removed. In ſuch caſes the ſalt marſhes, or ſome very young paſture near the banks of a running river, is the moſt likely to ſucceed.

Thoſe that have had Fevers or other ſickneſs in the ſpring of the year, often require graſs upon their recovery, and ſome crave ſo eagerly after it, that they do not come eaſily to their appetites without it; and certainly nothing reſtores Horſes ſooner after ſickneſs than graſs, becauſe they are then prepared for new Blood and new Juices, which the graſs gives them ſooner than any other food. Horſes that peel ſpring and fall, which is moſt apparent about the roots of their Ears, Necks, and Cheeks, the effect of ſome ſurfeit ill cured, require the ſpring graſs, and ſometimes for ſeveral graſs ſeaſons together before ſuch deformities can be removed; tho' in ſome degrees, and in ſome conſtitutions, theſe ſymptoms will return annually, notwithſtanding all the means that can be uſed to prevent them.

Miſtakes concerning graſs.

Many turn out Horſes to graſs for lameneſſes, without any good effect, and ſometimes they return worſe than they went out, which is generally owing to ſome error or miſtake. In all new lameneſſes reſt and proper applications are neceſſary, and alſo that the part ſhould be kept from the cold and a damp air, which cannot be eaſily avoided at graſs, at leaſt till the weather grows warm and dry. If the lameneſs be in any of the joints, it always proves more obſtinate than when it happens in the tendinous parts, and in the tendinous parts more obſtinate than in the fleſhy parts, and a Horſe of ſpirit, when he is turned to graſs for lameneſs, runs greater riſques than others that are more calm and temperate; for theſe ſeldom take reſt or move ſo gently as to favour themſelves that the parts may conſolidate and recover ſtrength, but are apt to ſtrain them afreſh, and render their caſe more obſtinate. But hurts in the fleſhy parts, and even ſometimes in the Sinews, recover ſoon at graſs, unleſs when they are very violent, and that ſome proper applications or neceſſary manual operation has been neglected, that ſhould have been done before they were turned out.

Many find themſelves diſappointed in turning Horſes to graſs, ſuppoſed to be lame with humors flying about them. That is, when they become lame, without any viſible hurt or known accident, which lameneſs appears ſometimes in one Shoulder, ſometimes in the other, and ſometimes behind. This ſort of lameneſs, is for the moſt part cauſed by a ſizy groſs Blood, which requires to be thin'd and attenuated. Many Horſes, when they come out of the dealers keeping, fall lame with rheumatick diſorders, as ſoon as they are put to any kind of buſineſs, others for want of ſufficient exerciſe, or very foul feeding, and from many other ſuch cauſes. And the reaſon why they often fail of ſucceſs at graſs, is pretty much owing to negligence in chuſing a proper paſture, which ſhould be the drieſt that can be found. Neither ſhould they be turn'd out till the weather is pretty warm, for when the Blood is of itſelf ſluggiſh in its motion, for want of due fluidity, the lying upon cold damp ground muſt naturally heighten the malady, and a very rank paſture will do the ſame, even when the ground is pretty dry; beſides when Horſe's Blood is in this ſtate, they are liable to many accidents abroad to which they are not expoſed in the houſe, for there they often range over the grounds till they are hot, to avoid the ſtinging of the flies, and get immediately into the ponds to cool themſelves, where they often ſtand a conſiderable time up to their Bellies, by which they greatly aggravate their lameneſs; and therefore the beſt paſtures for ſuch Horſes are thoſe, where inſtead of ponds there runs ſome brook or rivulet, where they can ſeldom go above their Knees, or on ſome good dry common, or on the ſalt marſhes, and with this precaution the owner may expect better ſucceſs. But I ſhould always chuſe to bleed and purge ſuch Horſes, before they are turned out, with thoſe things that are proper to attenuate the Blood, and to promote the ſecretions of which, ſome forms will be preſcribed hereafter. And I have often found purging alone cure lameneſſes of this kind more readily than graſs, where Horſes are expoſed to all the abovementioned, and ſometimes to many other accidents. And I have known the ſame kind of lameneſſes cured by conſtant and long continued Exercise, eſpecially journey-riding, which from the nature of theſe diſorders, may be eaſily accounted for, eſpecially in young Horſes; for when Horſes grow old, the ſucceſs can never be certain, becauſe the lameneſſes of old Horſes are often attended with ſtiffneſs in the Joints and Ligaments, and in many caſes, with incurable defects in their Nerves.

But the lameneſſes that chiefly require graſs, are where the Muſcles of the diſeaſed part are ſhrunk, and require to be kept continually in motion, with the help of a Patten Shoe on the oppoſite Foot, to oblige the Horſe to keep his ſhortened Limb upon the ſtretch, whereby the waſted parts are ſometimes again reſtored to their uſual dimenſions, and the Lameneſs recovered.

Horſes that have been fired for Lameneſs, upon the Joints or large Sinews, when they have reſted a ſufficient time after the operation, are alſo the better for going to graſs, or running abroad in ſome open place, to prevent ſtiffneſs and contraction; ſome kind of bad footed Horſes, eſpecially ſuch as have their hoofs brittle, hard and flinty, become more ſoft and pliable by running abroad. Thoſe that have their Feet impair'd and cut to pieces, in the cure of Quittors, and other ulcers, and thoſe that are worn down with travelling, or bad ſhoeing, are always ſooneſt repaired at graſs, with ſeveral other defects of the like nature. Horſes may likewiſe be turn'd out after they have been cured of the Farcy, to wear out the ſtiffneſs and calloſity, that ſometimes leaves a deformity on the Limbs, till all the Scabs and Scurff comes off, and the Skin and Ligaments of the Joints, where it is often deep-rooted, grow limber and pliable; but then one ought to be careful, that the Farcy is perfectly eradicated, otherwiſe it will ſoon break out again, and perhaps with more rankneſs than before.

Several other caſes might be mentioned, wherein graſs would perhaps be convenient, as particularly for Colts and young Horſes, which ſometimes fall into peoples hands, before they are fit to be put to buſineſs. Horſes that have been long coſtive, where all proper means have been uſed in vain to remove it; but what is further needful on this ſubject, may be left to every one's diſcretion, and therefore I ſhall now proceed to ſhew, what are the effects and benefits of Soiling, and how that ought to be managed.

The uſe of Soiling.

Soiling Horſes in the houſe, proves ſometimes beneficial, and ſometimes hurtful, either when a Horſe's caſe has not been rightly judged of, or when the ſtuff made uſe of for ſoiling happens to be bad. Geldings are not frequently ſoiled, but chiefly ſton'd Horſes, becauſe it is difficult to procure good incloſures for them to run ſingle abroad, without much charge and trouble, for two of them will ſeldom agree long in one place. And therefore I ſhould never adviſe any one to turn Stone-Horſes to graſs, or ſoil them in the houſe, unleſs they had ſuch complaints as abſolutely requires it, for moſt of the diſorders for which Stone-Horſes are ſoil'd, may be remedy'd by feeding on ſtraw for a time, inſtead of hay, which they will diſpenſe with much eaſier than Geldings; for many of our Geldings are apt to grow faint and weak without hay, and few of them can be brought to eat ſtraw with pleaſure.

If a Stone-Horſe happens to be lame in ſuch manner, as to require a place where he may range at pleaſure, then an orchard, or ſome field that is exceedingly well-fenced, ſhould be provided for him; but if he has no lameneſs, but ſome other diſorder, as heat, and eruptions on his Skin, that may require Soiling, or if Geldings or Mares are to be ſoil'd for any ſuch complaints, care ſhould be taken to provide ſuch herbage for them as is young, tender, and full of ſap, whether green barley, tares, clover, or any thing elſe the ſeaſon produces; tho' green barley is generally preferr'd to all others for this purpoſe, but then it ſhould be cut before it ſhoots into the Ear, while it is full of ſap and moiſture, for afterwards it turns dry, and the ſtem grows tough and hard to digeſt. The ſame caution is no leſs neceſſary with reſpect to clover and tares, that theſe be young and cut freſh once every day or oftner, otherwiſe they may eaſily do more hurt than good; for tho' a Horſe is ſo ſtrong by nature, and more vigorous and active than perhaps any other creature of his ſize, yet his Stomach and Guts are but thin and ſlender, if compared with ſome other animals of the ſame bulk, and more eaſily diſtended, and therefore ſeems to require food of eaſier digeſtion, than the horned cattle, which is pretty manifeſt by the choice he makes for himſelf when at graſs, and therefore when the herbage with which a Horſe is ſoil'd, happens to be old, tho' a good feeding Horſe will eat it for want of ſomething better, yet I have ſeveral times known great diſorders follow upon it, by ſtopping in the inteſtines like a bundle of ſmall twigs, and by not obtaining a free paſſage thro' them, has been attended with great inward heat, heavineſs of the Eyes, reeling, loſs of appetite, and other

What kind of herbage is fitteſt for Soiling.

other untowardly ſymptoms, 'till a plentiful diſcharge of dung has been procured by emollient glyſters, which I have ſeen come away in great clods, very hard, black, and fœtid, not unlike what has lain a conſiderable time mellowing, and rotting on a dunghill, in the ſame manner as happens ſometimes to Horſes, that are fed with rye-graſs and clover, where they have not ſufficient work or exerciſe to digeſt it. I have known others, perhaps where the digeſtive faculty has been ſtronger, break out about their Necks, Rumps, and other parts of their Bodies, and ſometimes on their Limbs, with many other ſigns of a ſurfeit, to the great ſurpriſe and diſappointment of the owners. For all ſuch herbage, when it is diveſted of its ſap, has very ſoon a tendency to putrefaction, and therefore not only induces a Lentor in the firſt paſſages, *viz.* the Stomach and Guts, but alſo in the Blood, cauſing obſtructions in the ſmall capillary Veſſels towards the Skin, by its viſcidity and coldneſs, at length producing that acrimony and ſharpneſs, which ſhews itſelf in eruptions, an effect very contrary to what is intended by ſoiling. And therefore thoſe who would ſucceed well in Soiling Horſes, ſhould be near the place where it is cut, that it may be freſh, at leaſt every morning, and leave off when it becomes old and rank, or elſe to go on with ſome other herbage which is of later growth, till the Horſe has been ſufficiently cooled and purged.

I have obſerved ſome Horſes that have purged but little in Soiling, others have purged a great deal more then what is uſual at graſs, which may ſometimes be owing to the goodneſs or badneſs of the herbage, to its being younger or older, freſher or ſtaler, and perhaps ſometimes to the difference of the ground on which it grows. However, I am apt to think, this is as often owing to the difference of conſtitututions in Horſes, as to any other cauſe, for when ſeveral Horſes are ſoil'd together, we ſhall ſee ſome purge till they fall away and grow lean, ſome purge very gently, and others ſcarce purge at all, tho' they are all fed alike, and with the ſame herbage; and the ſame diſcrimination is often obſervable at graſs, which only ſhews, that ſome Horſes are not ſo eaſily mov'd to purge as others, tho' it is probable thoſe that purge the leaſt, ſtale the moſt plentifully, which in ſome caſes may be equally advantageous.

Cautions in ſoiling Horſes.

When Horſes loſe their Fleſh much in ſoiling, they ſhould be taken off to a more ſolid diet, otherwiſe I have known them grow ſo poor and weak, that it has been ſome time afterwards before they have recovered their Fleſh. In this there is a great difference between ſoiling and grazing, for if Horſes loſe their Fleſh never ſo much at graſs, yet they ſoon grow fat after the purging, for there they have the benefit of the open air, and great choice, which advantage Horſes at ſoil have not, but are forced to be taken off abruptly to dry food. And therefore when a Horſe has done ſoiling, he ought to be continued ſome time to an open diet, at leaſt a fortnight or three weeks. A little ſweet bran may at firſt be mixed with his oats, and his hay ſprinkled with water juſt when it is put into the rack, and every day gentle exerciſe, increaſing both his food and exerciſe by degrees. He ſhould alſo be dreſſed gradually, and only littered down in the night, and not to lye conſtantly on his litter for the firſt fortnight, all ſudden changes from hot to cold, or from cold to hot being hazardous, after which he may be curried and dreſſed as uſual, and his diet increaſed, to render him fit for buſineſs. Indeed we find ſome Horſes ſo hardy, that they ſcarce need theſe precautions, yet no man can well err in a reaſonable care to prevent accidents, which ſometimes happen where they are leaſt expected.

Horſes taken up from graſs how to be managed.

As for Horſes newly taken up from graſs, they require a ſomewhat different management, and this alſo varies, according to the time they run abroad, the ſeaſon of the year, and other reſpects, that may require more or leſs preparation, before they can be made fit for buſineſs. Horſes that have only run about a month, or five weeks at the ſpring graſs, need not be ſo much minded as thoſe that run the whoſe ſummer; and thoſe that run the ſummer only, are eaſier habituated to the houſe, than ſuch as run the whole year abroad. But I only ſpeak with reſpect to the generality, for ſome are ſo hardy and inſenſible of changes, that they need but little attention how they are ordered; nevertheleſs we may obſerve, when Horſes are taken up from graſs into the houſe, and put immediately to hard meat, after a long diſuſe of it, they at firſt, apt to turn hot aud coſtive, which diſpoſition is uſually ſollowed with other complaints; and therefore to avoid ſuch inconveniencies, they ought firſt to have a mixture of bran, and a little chop'd ſtraw with their corn, and ſometimes a feed of ſcalded bran, for a fortnight or longer, to keep them cool and open; after that, they may be allowed clean corn, with plenty of water, given often in ſmall quantities, and at the ſame time, ſhould have their Exerciſe abroad in the open air.

But Horſes that run the whole ſummer at graſs, require more airing abroad, than thoſe that have only been at ſpring graſs, for the uſe that moſt people want of them in the ſummer, renders all cautions herein almoſt unneceſſary; and therefoie Horſes of value ought always to be taken up before the long nights and latter rains, not only that they may have fit weather abroad for their Exerciſe, which is very neceſſary, but becauſe the latter graſs has little ſpirit in it, and at beſt affords but a foggy nouriſhment, though it often makes Horſes look plump and fat. Beſides, that fine thin-ſkin'd Horſes, are ſeldom able to endure the heavineſs of the rains, nor to lye on the wet ground, for the reaſons that have been already given, but are thereby expoſed to many dangerous accidents, of which I have known ſeveral inſtances.

Running abroad in winter.

Horſes that run abroad the whole winter near *London*, are generally brought into ſome dry ground, where they have ſhades or outhouſes to go into, as ſoon as the ground on which they were grazed turns potchy. Here they continue till the return of the ſpring graſs, which they are ſuffered to go into as ſoon as it is ready for them, without waiting for warm weather. This method I have often approved, and I look upon Horſes not to be ſo much expoſed by it, as by running late in the year, and then brought directly home into a warm ſtable, whereby they often turn very thick winded, occaſioned by a poor viſcid Blood, from the fog that ſprings up with the winter-graſs, in many of our common paſtures; ſometimes their Bellies and their Legs, ſwell to a very extraordinary degree, and requires a ſkilful management to remove ſuch indiſpoſitions; but this may in a great meaſure be avoided, by running abroad in ſome good roomly yard, and after they have had the ſpring graſs, they are generally fit to go into any buſineſs without much preparation.

Thoſe that run abroad in the ſalt-marſhes are ſeldom houſed or brought under any cover, as I have already taken notice, and yet for the moſt part do better than thoſe that are fothered all the winter, who require the ſpring graſs very much to repair them. I have known ſeveral Horſes brought up from the marſhes in the winter months in good order, and have been fit for buſineſs in a ſhort time afterwards. And I have been told it is no unuſual thing to take up Horſes from the marſhes, and ſend them a long journey directly, without any preparation; and I am the more ready to believe this, becauſe I have ſeveral times known Horſes taken off the dry commons in winter, and perform very well on the road.

But it is quite otherwiſe with thoſe that go on our common paſtures, either in cold clay grounds, or where the graſs is forced with dung. Theſe, at leaſt many of them, require a good deal of management before they are fit to be put upon any hard ſervice; ſome are ſo foggy and breathe ſo thick when they come to ſtand in the houſe, that thoſe who are unacquainted with the reaſon of this ſymptom, always ſuſpect their wind to be going, which ſometimes ſo happens where care is not taken to prevent it. Others ſwell all over their Bellies and their Legs to ſuch a degree that they are unable to lie down, and can hardly be moved out of their ſtandings; but this is more peculiarly the caſe of thoſe that are naturally ſubject to ſuch infirmities, and therefore ſhould be kept altogether in the houſe, or run conſtantly abroad, as will be ſhewn more fully hereafter, when I come to treat of ſwelled Legs, *&c.*

Now it ought to be a general rule in ordering Horſes newly taken up from graſs, to augment their airings and exerciſe in proportion to the time they have run abroad, and the ſeaſon in which they are taken up into the houſe; and as their airings and Exerciſe is increaſed, ſo their diet may alſo be augmented, both as to its quantity and ſolidity, *viz.* by changing from a lower diet, where there is a mixture of bran and other looſe food, to clean oats and hay; neither ſhould they at firſt be ſhut up in warm ſtables, but in ſtables that have been ſeaſoned with other Horſes, where there is a free air, and places to let it in at pleaſure. And therefore I need only add to what I have already advanced on this ſubject, that the longer a Horſe has run abroad in the open air, the more he ſhould be kept in his airings when he returns home; and upon this account, it is a great advantage thoſe Horſes have that are taken up after they have had the ſpring graſs, or even when they are taken up before that time, when the ſpring is advancing, when the Blood of all animals is more exalted, and in much briſker motion with the advanced ſeaſon, when the weather is fine, the days growing long, and when all nature ſeems to have the chearfulneſs of youth. Whereas thoſe Horſes that are taken up in the winter-quarter have not theſe advantages, the days being ſhort, the air damp, and oftentimes the weather ſo bad that they can but ſeldom be carried abroad. And if we add to this the natural decline that the conſtitutions of many Horſes are under at this time of the year, eſpecially Geldings, their Blood being then poor, viſcid, and ſluggiſh in its motion, we may eaſily perceive the difference, and experience will ſhew us how difficult it is ſometimes to raiſe them up for uſe and ſervice.

Some give their Horſes Antimony after graſs, ſome Antimony and Sulphur in equal quantities. Theſe are generally mixed with their bran, in which all powders mix more eaſily than with oats. Others give the *Crocus Metallorum*, or Liver of Antimony, with a view to ſweeten their Blood, and to keep them open; nevertheleſs I have known many Horſes do well without the uſe of theſe things, only by proper airings and a well managed diet. The Antimonials

Antimonial and other alterative powders ſometimes neceſſary aftergraſs.

nials are chiefly neceſſary to Horſes that are taken up in winter to warm and invigorate their Blood, which indeed is the more wanting when the graſs has been but indifferent, eſpecially for thoſe that go upon the aftermarſh, where a large crop of hay has been firſt taken off the ground. This ſort of graſs is commonly thick enough and plentiful about *London* in dreeping wet ſeaſons, and the Horſes that feed upon it will be full of fleſh, after the hot weather and the ſtinging of the flies is over; but on grounds that have been much dunged, often grow full of bad Blood, that requires Antimonials, or ſome other alterative, to correct it. But the diſpenſer of theſe things ſhould be careful to get them good of their kind, otherwiſe they may loſe much of what they aim at. The Antimony that is in large pieces, clear and ſhining, the colour of poliſhed ſteel, is always the beſt, for that which is black and crumbly is not ſo pure, and ought to be rejected. It ſhould not be given in groſs powder, as is generally practiſed, but pounded till it is very fine, otherwiſe little of it will enter into the maſs of Blood, but will ſometimes, eſpecially when given in large doſes, make Horſes ſcour more than is neceſſary; but when it is mixed with ſulphur in moderate doſes, it becomes ſerviceable in carrying off thoſe Coughs Horſes often bring with them from graſs about the beginning of winter, and helps to preſerve their wind. The *Crocus Metallorum* is generally ſold for Liver of Antimony, the difference being no other than that the latter is not ſo much di-

The neceſſity of ſound drugs.

veſted of its ſulphurs as the other, and therefore if the firſt be free from the *Scoria* or droſs, the doſe ſhould not exceed an ounce a day; for when it is given in larger doſes, inſtead of promoting a moiſture and breathing thro' the ſkin, which is the thing intended by it, it is apt to create heat and dryneſs in ſome conſtitutions; for when the Blood is extremely viſcid, and paſſes with difficulty through the ſmall veſſels of the Skin and other extremities, thoſe things that are deſigned to accelerate its motion, by meeting too great reſiſtance, may ſometimes retard it, and the active particles of the Antimony being thus diveſted of its ſulphurs, may create heat, by driving the Blood into thoſe parts before it is ſufficiently attenuated to paſs thro' them; and therefore when any ſuch effect happens upon giving the *Crocus Metallorum*, that there is no kindly moiſt feeling on the Skin, but rather heat and dryneſs, the beſt way is to bleed and to leſſen the doſe to half an ounce, and afterwards to increaſe it, or rather, which I think the better way, to begin with crude Antimony and Sulphur, or Antimony and Gum Guiacum; and after the Blood has been gradually warmed and attenuated with theſe things, the Liver of Antimony or *Crocus Metallorum* may be adminiſtered with more ſucceſs.

In what manner a Horſe is to be ordered to fit him for graſs.

Some purge their Horſes before they turn them out to graſs, and ſome only when they return from it. As for purging before they go out, I cannot ſee that this is always needful, unleſs when a Horſe is very much loaded with fleſh, and then indeed not only purging, but bleeding

ing and rowelling may be alſo neceſſary, to prevent his being ſurfeited; but except in ſuch caſes as this, I ſhould think the beſt way to prepare Horſes for graſs is, to lay them cool upon their dung, to open the windows and air-holes, if it be in ſummer, and lower their feed; and I have known great numbers of Horſes turned out ſucceſsfully without any other preparation. However, if a Horſe was to have any kind of phyſick given him before graſs, it ſhould be milder than what is uſual, and compounded of the beſt drugs; for ſometimes the effect of bad drugs do not go off immediately, and before that, it would be dangerous to turn a Horſe out to graſs.

The proper time of purging after graſs.

Indeed when Horſes are taken up from graſs, purging is ſometimes uſeful and neceſſary, eſpecially thoſe that have run all the ſummer abroad, and are apt to have their Legs ſwell when they come to ſtand in the ſtable. But this ſhould not be gone about immediately, while their Blood is poor and abounds with thin watery ſeroſities, and their ſpirits languid, till they have been repaired with a more generous diet, otherwiſe a Horſe will go through his purging with ſome difficulty, and perhaps not without danger. But when a Horſe has been a while habituated to the houſe, and had ſome feeding, and begins to thrive, but not ſo as to have the ſwelling of his Limbs come down, purging will then be neceſſary to diſcharge the viſcid ſeroſities out of his Blood. But the purges proper in ſuch caſes ſhould always have a mixture of ingredients that are cordial and at the ſame time diuretick, otherwiſe they will do but little ſervice, as I have often obſerved. And in ſuch caſes ſome Horſes cannot be procured but by the moſt powerful diureticks joined with reſtringents, to recover the tone of the Fibres, which are always greatly relaxed when the Blood becomes poor and watery, by running long abroad on many of our common paſtures.

Rowelling ſometimes needful.

Some rowel their Horſes after graſs, which is often needful as a help to proper internals. But if a Horſe's Blood is watery, and his Belly and Legs ſwoln, he ought by no means be rowelled till his conſtitution is ſomewhat amended, and the watery diſpoſition of his Blood ſomewhat abated by a more nouriſhing diet. I have ſeen ſuch a profuſion of humours upon new-made iſſues in the Bellies of Horſes taken up from winter graſs, that it has been extremely difficult to prevent mortification, and ſome will diſcharge ſeveral gallons of a viſcid water before their rowels come to a thorough digeſtion, not unlike what is drawn from dropſical perſons, after which theſe rowels do great ſervice; but it is much ſafer to avoid the danger, which may be done by draining off a great part of the water with proper purges, but eſpecially diureticks, made up with ſteel powders or forge water, to which muſt be joined moderate Exerciſe and a good nouriſhing Diet, till the watery diſpoſition that ſhews itſelf about the Belly, Sheath and Legs is abated.

Precautions concerning rowels.

As to the general uſe of Bleeding and Purging to prevent ſickneſs in Horſes, and to render them

Further cautions concerning Bleeding and Purging.

them the more fit for buſineſs; tho' I have already mentioned ſomething of the prepoſterous and ill-judged uſe of all ſuch means, yet I ſhall lay down ſuch caſes wherein I think it may be needful, or at leaſt juſtifiable, to bleed and purge: And firſt as to bleeding.

Thoſe Horſes that ſtand much in the ſtable, and are full fed, require bleeding more than thoſe that are in conſtant Exerciſe; but eſpecially when their Eyes look heavy and dull, red and inflamed, or when they look yellow or inflamed in their Lips and inſides of their Mouths, when they feel hotter than uſual and mangle their hay. Theſe are all indications that require bleeding, and likewiſe to lower their diet, until they have more Exerciſe. Young Horſes ſhould be bled when they are ſhedding their Teeth, which is a relief to them, and removes thoſe feveriſh heats to which many are ſubject at that time. The ſpring is always a proper ſeaſon for bleeding, becauſe their Blood is then more luxuriant than at other times, and in ſummer it is often neceſſary to prevent Fevers, always chooſing the cool of the morning, and keeping them cool the remaining part of the day.

Some bleed their Horſes three or four times a year or oftner, by way of prevention. Theſe take a very ſmall quantity at a time, not exceeding a pint or a pint and a half, only to give a kind of brisker motion to the Blood, and by that means to preſerve or render it more thin and fluid, and to prevent its ſtagnating in the ſmaller Veſſels, which indeed is the firſt beginning of almoſt all diſeaſes; but how far this ſucceeds, can be beſt known to thoſe who have practiſed it a ſufficient time. However, there is this inconveniency from frequent bleeding, that it grows into a habit, which in ſome caſes, cannot be eaſily broke off without hazard; and I have known Horſes become weak with frequent bleeding, and ſome have had their Necks ſo full of ſcars, that they have been apt to inflame and feſter, every time they were bled, which is always troubleſome, and often ends with the loſs of the Vein. And therefore to prevent ſuch accidents, thoſe who bleed Horſes ſhould not confine their operation to one place of the Vein, as they generally do, but uſe themſelves to open it higher or lower, as they ſee occaſion; and if they meet with any difficulty in bleeding the Neck Veins, the Plate Veins, or any other large Veins, that can be made to run a full ſtream, will equally anſwer the ſame end.

The Caſes that moſt require bleeding.

But the caſes that require bleeding moſt, are Colds, Fevers of almoſt all kinds, Falls and Bruiſes which ſometimes are dangerous to Horſes, becauſe of their great weight. Hurts and wounds of the Eyes, Strains in hard riding, or drawing, and all other accidents where a ſtagnation of the Blood may be ſuddenly expected, or where the ſmall Veſſels may be broke, and the Blood extravaſated. Thoſe that refuſe their food after riding, or any ſort of work, require to be bled more frequently than others, to prevent fevers, and inward inflammations of the Lungs, the Liver, or any other of the principal *Viſcera*. It is no leſs neceſſary to bleed Horſes at graſs, when the purgation is over, that they begin to take on fleſh, or at any other time, when they look heavy about their Eyes, for this is a proper indication for bleeding, and ſome rank paſtures require bleeding more than others.

There are alſo other indications, that require bleeding by way of prevention, *viz.* when any epidemical diſtemper prevails among the Horſes, at ſuch times the ſound Horſes may be bled, to keep them if poſſible from being infected; and if the contagion continues, it may not be amiſs to repeat the bleeding once in two or three months or oftner, but in ſmall quantities, for the loſs of too much Blood, may be hurtful in ſome times of contagion. It is likewiſe neceſſary to keep the ſound Horſes from the unſound, or remove them into places where the infection has never ſpread itſelf. I could, beſides theſe, mention ſeveral more caſes, where bleeding might be judg'd proper, even where there is no plain ſymptom of any beginning diſeaſe, ſuch as plenitude, and fulneſs of the Veins, ſtaling ſmall quantities, and of a very high colour, denoting inward heat, and craving after water, and ſuch like: and it is for the moſt part neceſſary to bleed before purging. But I ſhall not here enumerate any other, but leave what is to be ſaid further on the ſubject, to be treated of hereafter, where the indications that require bleeding, either in diſeaſes already begun, or where they are only threatned, will be further diſcuſſed.

Purging is another very uſual and common expedient, to prevent diſeaſes, but eſpecially thoſe accidents to which Horſes are often expoſed, in the common ſervices we require of them, *viz.* to prepare them for running, hunting, or any other laborious Exerciſe. If the purging ingredients are good, and the purges well made, they not only bring the Blood into a better ſtate than it was before, but by leſſening the quantity of the fluids in Horſes that have been high-fed, render them more ſtrong and vigorous, and conſequently more able to endure labour; but when their purges are made too violently ſtrong and griping, they often do more hurt than good. And I believe, I need not acquaint any one who knows what belongs to horſe-keeping, how much miſchief has been done by purging Horſes, either when the ingredients have been bad, or when the purges have been made too ſtrong, or when they have been ill-timed; all which things ought to be regarded in purging.

Further Cautions concerning Purging.

Horſes that are kept much in the ſtable, and have not Air and Exerciſe, in proportion to their food, require to be ſometimes purged, eſpecially in the ſpring, which is the beſt ſeaſon for purging, but in caſe of neceſſity, at any other time of the year, tho' the temperate ſeaſons are always to be preferr'd for that purpoſe; and theſe Horſes that ſtand much, and have but little Exerciſe, ſhould in ſome meaſure be prepared for their purges, as has been already mentioned, by bleeding, lowering their diet, and giving them ſome feeds of ſcalded bran, eſpecially the day before their purges are adminiſter'd;

Caſes that require it moſt.

miniſter'd; by which they will go off the more eaſily, and without violent gripings.

Horſes that fall off their Stomachs, whether that proceed from too full feeding, ingendering crudities and indigeſted matter in their Stomachs and Bowels, bad provender, or from any other cauſe that may relax them too much, as a long continued uſe of ſcalded bran; in all ſuch caſes, purging comes inſtead of vomiting to Horſes. But if a Horſe has been obſerved to feed but poorly for a conſiderable time, his purges ſhould be mild, eſpecially the firſt; it ſhould not be made of the common plantation Aloes, but of the Succotrine, and mixed with diuretick ingredients, to promote the diſcharges by urine as well as of the dung. The ſame care ought alſo to be taken in purging Horſes that are of a hot temperament, and with their fretting are eaſily inflamed, and loſe both their appetites and fleſh. Theſe Horſes often agree with bleeding, but are no ways able to endure the common purges, that are apt to cauſe too great a ferment in the Blood, and for the moſt part do not work off ſo kindly as one could wiſh; and therefore they ſhould be mild, cooling, and well corrected.

Purging is alſo neceſſary for Horſes when they have ſtubborn dry Coughs, that threaten their wind, thoſe eſpecially that are great and foul feeders. It is impoſſible to imagine the benefit theſe receive ſometimes from purging, more than from all the pectorals that have ever been adminiſtered in ſuch caſes, tho' it is always good to join theſe along with their purges. In this caſe, their purges are alſo the moſt efficacious, when they are join'd with ſome mild mercurials.

Horſes that are ſubject to rheums, and defluxions on their Eyes, often receive benefit from purging. But their purges ſhould be little more than alteratives, and ſuch as promote urine plentifully; for ſtrong purges, inſtead of doing good to the Eyes, fix the humors there, and render the caſe more obſtinate.

A Horſe that has humors flying about him, that ſometimes go off inſenſibly and diſappear, or if they break out in impoſtumes, and boils, that diſcharge of themſelves, require purging; which is always neceſſary after ſuch eruptions, as alſo after dry, or moiſt warbles.

Horſes that have thoſe ſort of lameneſſes, that are ſaid to proceed from humors, which in ſome are of the rheumatick kind, but, in young Horſes, are for the moſt part owing to a ſizy blood, or to Exerciſe they have not been accuſtomed to, breaking or bruiſing the ſmall *fibrillæ* of the Muſcles. Theſe lameneſſes are ſeldom fixed to one place, as ſtrains, violent blows, or any other kind of hurt cauſed by external accidents, but for the moſt part always appear, firſt on one Shoulder, and then on the other, and often with a ſtraitneſs and confinement, from the Muſcles of the Breaſt, and in caſes where the Blood is in a very bad ſtate, ſhift from the fore parts, to the hind parts, and in ſome, will cramp almoſt all the Muſcles of the Body to ſuch a degree, that I have ſeen many Horſes in theſe circumſtances, rather creep than go. In this caſe, purging is not only neceſſary, but ought to be often repeated along with ſuch other medicines, as are proper to attenuate and thin the Blood, and render it more fluid, for the want of due motion in the Blood ingenders many ill qualities in it, and produces lameneſs, and many other evils, which will be treated of more fully in the enſuing part of this Work, with the way to redreſs them.

I ſhall conclude with another very common caſe, that requires purging as much as any other, and wherein purging often proves very efficacious, *viz.* Horſes of watery moiſt conſtitutions, that are ſubject to ſwellings in their Legs, which are ſometimes dry, and go down with Exerciſe, but are apt to return and ſwell again, whenever they come to ſtand ſtill; ſometimes they break and run a ſharp briny ichor, which cannot be ſo well removed any way as by purging, eſpecially with ſuch things as diſcharge the watery ſeroſities in great plenty, and give a better conſiſtence to the Blood.

A
GENERAL METHOD
OF
PURGING HORSES:
WITH
Some proper FORMS or PRESCRIPTIONS ſuited to the ſeveral Ends of PURGING.

BEFORE a Purge is adminiſtred to any Horſe, it is neceſſary ſome preparation ſhould be made for it, as circumſtances may require, in order to render purging the more ſafe, and at the ſame time the more efficacious, agreeable to thoſe hints I have already given in treating of Diet and Exerciſe, which I ſhall here ſo far reſume, as may be neceſſary for the inſtruction of thoſe who are but little acquainted with ſuch matters.

The manner of preparing Horſes for purging.

A Horſe that is fat and full of Fleſh, either from high-feeding, want of ſufficient exerciſe, or from any other cauſe, it is proper, at leaſt adviſable, that before Purging he ſhould be bled, and at the ſame time ſhould have his diet lowered for the ſpace of one week before his firſt Purge is adminiſtered; but this caution is more eſpecially neceſſary for thoſe that have been pampered and kept up for ſale. For when Horſes in this condition have their humours ſtirred and agitated without due preparation, this ſometimes creates diſorders that may require a great deal more purging than would otherwiſe be neceſſary, and other means alſo to be uſed before they can be removed. It can never be amiſs to give ſome few feeds of ſcalded bran, eſpecially before the firſt Purge, that the Horſe's Bowels may not be too full and pent up with hard excrements. For this ſometimes hinders the operation of the phyſick, and creates great ſickneſs, which ought as much as poſſible to be avoided; for thoſe Purges are the moſt efficacious and the moſt ſafe that work off with the leaſt ſickneſs.

The firſt purge ought always to be mild.

The firſt purge ſhould always be mild, unleſs where a Horſe's conſtitution is well known to be hardy and ſtrong, for ſome Horſes are indeed ſo ſtubborn in their conſtitutions that ſcarce any thing will move them. Nevertheleſs miſtakes of this kind may bring on a ſuperpurgation, which is always dangerous. And there is the more reaſon to be cautious in purging, becauſe Horſes differ very much in their conſtitutions; for we often find one Horſe purge violently with a doſe that would ſcarce move another; and the ſame Horſe will work powerfully with a moderate doſe at one time, and at another will purge but gently, and this change is often owing to the ſtate of the Stomach and Guts at the time when the Purge is adminiſtered; for when theſe are foul a very ſmall thing excites them to throw off their contents, that at another time would ſcarce move them at all. And I have known an alterative that has not had above half an ounce of fine aloes in its compoſition, without any other purging ingredient, and has been deſigned only to open a Horſe's Body, ſo as to make him dung like a cow, purge a Horſe very much. And one may from ſuch examples eaſily imagine what conſequences muſt have followed a ſtrong purge given at ſuch a critical time. Theſe things may alſo teach us in purging Horſes, how neceſſary it is to provide them with drugs that are good of their kind, and ſound; and likewiſe how needful it is that they ſhould be well corrected, eſpecially to Horſes that are apt to be ſick with their Purges, and can have no relief by vomiting, as ſome others of the brute creatures, and even as men, who frequently vomit with their Purges when their Stomachs are full, or in caſe of more than ordinary delicacy in ſome conſtitutions, whereby they are eaſily twitched and ſtimulated with the pungency of a purging medicine, ſo as to excite vomiting.

After premiſing theſe things, I ſhall now lay down ſome preſcribed forms of Purging for the various caſes mentioned in the preceding diſcourſe, and ſhall begin with the following, which may be uſed with good ſucceſs in all common incidents, where Purging only is neceſſary.

Forms of Purges.

Take Succotrine Aloes, ten drams, Jallap and Salt of Tartar, of each two drams, grated Ginger, one dram, Chemical Oil of Aniſeeds, thirty drops, Syrup of the Juice of Buckthorn Berries, ſufficient to make it into a ball, which may be rolled in Liquorice Powder or Flour.

In what manner Purges ought to be prepared.

The Aloes ſhould be picked clean from its droſſy parts, and then made into fine powder, the Jallap ſhould be freſh and newly powdered, for it is apt ſoon to decay if it happens to be expoſed in a damp place, as all roots and other vegetables are; and therefore the beſt way, when pounded, is to keep it in a wide-mouthed phial, well corked, and in a dry place, otherwiſe it may not anſwer expectation; whereas if this care be taken, it will always be a ſtimulus to make the purge work ſmartly, and greatly contribute to drain off the ſuperfluous humidity from the Blood, and the finer Aloes will no leſs contribute to attenuate and diſſolve its viſcid coheſions.

This will anſwer all the ends of common Purging, where nothing elſe is required, eſpecially for Horſes that are not extremely hard to purge; and when this happens, another dram of Jallap may be added to the ſecond purge, that is, three drams inſtead of two, which will ſeldom fail working effectually and without danger,

The manner of giving purges and working them off.

All Purges ſhould be given early in the morning, when the days are long, and in winter about eight of the clock is the beſt time, for working off their Purges about the middle of the next day, when it is the warmeſt and the fitteſt time for that operation. They ſhould be given faſting upon an empty Stomach; and about three or four hours after, a Horſe that has taken a Purge ſhould have a feed of ſcalded bran, and when he has eat that up, ſhould have a ſmall portion of ſweet hay let down into his rack, which may be renewed at proper times, according to his appetite. He may have one or two more feeds of ſcalded bran the ſame day, and if he refuſe to eat warm meat, which ſome Horſes will loath that have been cloyed with it before, he may be allowed raw bran, which, if he drink ſufficiently with it, will do the buſineſs perfectly well. All his water ſhould be made milk warm, while the Purge is in his Belly, with a handful of bran ſqueezed in it; but if he refuſe to drink white water freely, let him have it without the bran, for his Purge will always work the more kindly that he drinks.

Early the next morning he may have another ſmall feed of ſcalded bran, if his Stomach ſtand affected to it. But if he does not chuſe to eat, which ſometimes happens before the phyſick has begun to work, when the Stomach is ſqueamiſh, then let him drink as much water as he cares for, juſt with the chill taken off, and ride him gently, beginning with a walk, and afterwards a gentle trot, which will help his Purging, and make him throw out plentifully. This ſhould be done two or three times a day, unleſs he purge violently; and if ſo, once or twice a day will be ſufficient.

A Horſe in Purging ſhould never be rode till he ſweat, otherwiſe it will run off chiefly in ſweat and urine, and indanger his catching cold. And for the ſame reaſon I ſhould never chuſe to have a Horſe cloathed in Purging, with more than a ſingle cloth, and his hood tied on very looſe, that it may be laid aſide without danger, as ſoon as he is ſhut up and his Purging ſtopped. At night he may be allowed a ſmall feed of oats mixed with his bran, and likewiſe the next day, if his Purging continues. But when that is gone off, he may be fed with clean oats till the day before the next Purge, when it will be proper to feed again with ſcalded bran.

Moſt of our jockeys and grooms work off their purges with cold water, which indeed is not a very commendable way, if circumſtances did not ſometimes render it unavoidable. When the coarſer Aloes are given, theſe ſort of Purges make them ſo extremely ſick, that they will not touch water, if it be the leaſt warmed; ſo that it is better in ſuch a caſe, to indulge them in drinking cold water than not to drink at all, for drinking always ſets their Purges a working, and prevents the dangers that otherwiſe might happen from coarſe or ill prepared phyſick; and indeed ſome Horſes have ſuch nice and ſqueamiſh Stomachs, that the ſame indulgence of drinking cold water muſt be allowed to them, even when their Purges are made of the beſt ingredients and thoroughly well corrected. Not that good and well prepared phyſick will hurt a Horſe in any degree; for if it does not work ſenſibly in the diſcharge of great quantities of excrements, its operation may be very efficacious, as an alterative to purify the Blood; and I have often given very mild purges for that purpoſe only, and with very ſurprizing ſucceſs in many caſes, to Horſes that could not bear ſtronger ones. But this is ſo contrary to the notions of the owners, and others concerned in them, who are greatly diſappointed if a Horſe's purges do not anſwer their expectation in the common way of emptying the Bowels, and draining off a great deal from thence, that I have myſelf ſuffered them to drink cold water, that they might purge the more plentifully.

The danger of purging with bad drugs.

If a Horſe be of a robuſt ſtrong conſtitution and a good feeder, he may be purged with the common Aloes, tho' I have generally myſelf uſed the Succotrine, and always adviſed it to others. And of the many hundreds of Horſes I have purged, or have been purged by my direction, I never had one that died in phyſick, or ever had any hurtful accident happen to them. But I have known many Horſes killed with Purging, and others have been ſo jaded, that they have never totally recovered; and ſome that overcame the ſhock were forced to lie by a conſiderable time before they could be of any great uſe to their owners. All which was owing either to the badneſs of the drugs, or to the ill-timing the phyſick, or misjudging the Horſe's conſtitution.

The Aloes that comes to us from our own plantations, is called Hepatick, from the reſemblance it has to the colour and variegations of a Liver. It is brought over in large ſhells of ſome kind of Gourd. That which uſually goes by the name of *Barbadoes* Aloes, is of a dark colour and very rank ſmell, and ſo rough in its operation, that many Horſes have been killed by it. But of late years we have a milder ſort, which goes by the general name of plantation Aloes, which is a good deal clearer than the *Barbadoes* Aloes. This is of a much paler colour, breaks more clean and ſmooth, and the powder more yellow, approaching nearer to the Succotrine, but nothing near ſo well ſcented, nor in its effects ſo well adapted to attenuate and ſweeten the Blood; but makes Horſes extremely ſick, and runs off ſo powerfully in the dung, that thoſe who are unacquainted with the true end of Purging, are often pleaſed to ſee them work in ſo violent a manner.

This ſort is chiefly uſed for purging Horſes, being much cheaper than the Succotrine, which comes to us from ſome parts of *Aſia*, wrapt up in ſkins. And if any one goes to an Apothecary's or Druggiſt's to have a Horſe's purge made up, where Aloes is preſcribed, they ſeldom make it of the Succotrine, but uſe the plantation Aloes, or the coarſe *Barbadoes* Aloes, theſe being generally uſed for cattle. However, for Horſes of ſmall value that are hardy and good feeders, or for thoſe of ſtubborn conſtitutions that cannot be eaſily moved with mild purges, the cleareſt and beſt of this ſort may be uſed; and many give it without any other preparation than working an ounce before the fire, or ſqueezing it in a warm hand to make it into a ball, and then dipping it in oil, thruſt it down without further ceremony, in a morning faſting. But I ſhould chuſe to correct it in the following manner.

Forms of purges for robuſt Horſes.

Take the beſt plantation Aloes, one ounce; freſh Ginger, grated, two drams; pound the Aloes very fine, with the grated Ginger, and a little Oil of Amber, and make it into a ball with Syrup of Buckthorn, and roll it in Flour or Liquorice Powder.

Or this:

Take of the beſt plantation Aloes, one ounce; Caſtile Soap, half an ounce; Ginger, two drams, or a dram of Powder of Cloves; make it as the other, with a ſufficient quantity of Syrup of Roſes or Marſh-Mallows. And roll it up, as the other, in Liquorice Powder.

But the following, which has ſo much of the plantation Aloes in its compoſition, as to ſtimulate the other, and help its operation, I have ſometimes given with good ſucceſs to Horſes of value, that were of ſtrong conſtitutions, and hard to work upon.

Take the fineſt Succotrine Aloes, one ounce; the beſt Plantation Aloes, and Cream of Tartar, rub'd together till they are well incorporated, of each two drams: Alſo freſh Jallap in fine Powder, two drams; Cloves in Powder, one dram, or two drams of grated Ginger; Syrup of Damaſk Roſes, ſufficient to make it into a due conſiſtence; with 60 or 100 drops of Oil of Amber.

If the Horſe be of a groſs conſtitution, two drams, or half an ounce of Caſtile Soap may be ſubſtituted inſtead of the Cream of Tartar, which will render it more cleanſing and deterſive; and more ſafe and efficacious in carrying off bad humors, and cleanſing the Blood from its impurities.

I might here inſert a variety of Purges, made of other purging ingredients, beſides theſe already mentioned. For the *Materia Medica* affords great ſtore of ſuch things, as Scammony, Gutta Gamba, Hermodactils, Turpeth Root, Rhubarb, and many more, which I imagine would both be troubleſome and unneceſſary, in regard the Aloetick purges, with a proper ſtimulus; ſuch as Jalap, or with Calomel, and other mercurial preparations, will anſwer all the ends of purging Horſes, better than any other. But I ſhould adviſe thoſe who give Calomel, to take care that it be well prepared, and when it is either given by itſelf, or added to a Purge, the Horſe ſhould be kept extremely warm, with warm water, and good cloathing; but further directions will be laid down, when I come to treat of the caſes that require it.

Thoſe Horſes that have a narrow ſwallow, or rather thoſe who take Balls with a reluctancy, may have one of the purging Balls diſſolved in a little Water Gruel or Ale, made juſt milkwarm,

warm, and will come with a great deal leſs trouble and charge, than infuſions and decoctions of Sena, Rhubarb, or any other of the purging ingredients fit for this purpoſe, which are very well contrived for the palates of Men, and their particular caſes, but not ſo very neceſſary for Horſes. Indeed laxative draughts are often made uſe of in ſeveral of the diſeaſes of Horſes; but as theſe do not come directly under the intention of Purging, I ſhall omit them altogether in this place, becauſe I ſhall have occaſion to mention them hereafter, in thoſe caſes where they are the moſt neceſſary. There will alſo be inſerted ſeveral other forms of Purges, ſuited to ſome particular diſeaſes that require Purging, which will be taken notice of in their proper places; and therefore, I ſhall only add one or two preſcriptions more, of a milder kind than thoſe already inſerted for general uſe, which will do better for Horſes of nice or weakly conſtitutions, than thoſe that are ſtronger, and be more ſafe in their effects, of which kind is the following.

Laxative Draughts.

Take the fineſt Succotrine Aloes, one ounce; Rhubarb in Powder, half an ounce; Ginger grated, one dram; make it into a Ball with a ſufficient quantity of Syrup of Damaſk Roſes.

Mild Purges.

The Rhubarb will make this exceed the uſual price of a Purge, eſpecially when that drug happens to be ſcarce. But I believe few Gentlemen would grudge the expence, rather than run any hazard with a very fine Horſe, of a delicate conſtitution, eſpecially thoſe that are very moderate feeders, and eaſily fall off their Stomachs after briſk exerciſe, which is the caſe of many genteel and pleaſant Horſes. Three or four of theſe Purges will greatly help them and make them grow both in Fleſh and Appetite, whereas the common Purges would go nigh to ſend ſome ſuch Horſes to the Dogs.

The following is alſo a very mild efficacious purge, and much cheaper than the preceding; it may be given to any conſtitution, and in any ſtate where a Horſe is not directly ſick. It will purge ſome Horſes ſufficiently, and prove a ſafe and good alterative, to thoſe that are able to bear the ſtrongeſt Purges, and by frequent repetition, where time can be allowed for it, will often anſwer all the ends of Purging better than what is uſually done with two three ſtrong Purges, made of coarſe rank ingredients.

Take of the fineſt Succotrine Aloes, that break of a Saffron Colour, one ounce, and two drams; Myrrh in fine Powder, half an ounce; Saffron and freſh Jallap in Powder, of each a dram; make it into a ſtiff Ball, with Syrup of Damaſk Roſes, or Syrup of Marſh-Mallows; then add a ſmall ſpoonful of the rectify'd Oil of Amber, make it into a Ball, and roll it in Liquorice Powder.

This is one of the ſafeſt and beſt Purges that can be given to a Horſe; and works both by dung and urine. Thoſe who chuſe to have it work briſkly, to fit a Horſe for preſent buſineſs, may add a dram or two more of Jallap, with about as much Ginger freſh grated, as will lye on a half crown-piece, but I ſhould only adviſe this addition, in caſe the firſt does not purge ſufficiently. The Jallap works as a good ſtimulus or incentive, and fetches away a great deal of watry, thin, viſcid humors, that greatly clog and enfeeble a Horſe in his motions, and is very ſafe: for the ſame reaſon, it clears the Stomach and Bowels of what it finds ſuperfluous there, and by that means creates an appetite, and promotes a good digeſtion.

Cautions in Purging.

I ſhall conclude what I have further to ſay on the ſubject of Purging, with ſome general cautions, which I believe will be found very needful, and that is, when a Horſe purges to exceſs, not to exhibit another, till he has recovered his appetite and ſtrength, and that he has filled himſelf, and does not appear lank, which perhaps may not be, till about eight or ten days after it was given. Some Horſes after Purging, eſpecially with the Plantation Aloes, do not recover their Stomachs to eat any thing for ſeveral days.

In which caſe, it is neceſſary to give a warm ſtomachic draught or two, made of Chamomile Flowers, freſh Aniſeeds, and Saffron, with about half an ounce of Diaſcordium diſſolved in it. Or inſtead of that, half an ounce of Diaſcordium, diſſolved in a pint of warm Port Wine. And if, notwithſtanding this, the Purging ſhould continue, the ſame things may be uſed, which I have inſerted in the enſuing part of this Treatiſe, for the cure of a Scouring and Looſeneſs. On the other hand, when a Purge a Purge does not work, but cauſes a Horſe to ſwell, and to forſake both his food and water, which is ſometimes the effect of bad drugs, or from catching cold, the only way to remedy that ſymptom, is by warm diureticks, for which I can recommend the following Draught.

Take a pint of White Liſbon Wine, mix with it a dram of Camphor diſſolved in a little rectify'd Spirits of Wine; then add two drams of Oil of Juniper, and the ſame quantity of the unrectify'd Oil of Amber, with four ounces of the Syrup of Marſh-Mallows, and give it without delay.

Or the following Ball:

Take Venice Turpentine, one ounce; incorporate it with the Yolk of a new-laid Egg. Then take Juniper Berries, and freſh Aniſeeds pounded, of each half an ounce; Spermacœti, and unrectify'd Oil of Amber, of each two drams; make theſe into a Ball, with a ſufficient quantity of Syrup of Marſh-Mallows, and roll it in Liquorice Powder.

Either of theſe will make a Horſe ſtale plentifully, and at the ſame time ſet his phyſick a working, and by that means prevent ſudden death, which ſometimes happens in ſuch caſes, from not knowing how to remedy thoſe evils. But the beſt way is always to adminiſter good medicines, which will ſeldom be attended with ſuch miſerable effects, taking care at the ſame time that the Horſe do not catch cold, which I have known produce a ſuperpurgation, with

Gripes and other diſorders. It will be further adviſeable when a Horſe ſwells very much in phyſick, not to ride him till he has ſome vent, either by dung or urine; but to lead him gently in hand. For any kind of violence is extremely dangerous when a Horſe is ſo much blown up, as I have ſeen in ſome inſtances where their Purges have not worked. This ſhould alſo caution us never to adminiſter ſtrong Purges till a Horſe has been well prepared for them, by bleeding and an open diet. For when a Horſe's Blood is viſcid and ſizy, and his Bowels full of crudities, ſtrong and coarſe phyſick can never fail to fill his Veſſels with wind and vapour, which may be more eaſily prevented than remedied.

The PROPER METHOD of adminiſtring DRINKS and BALLS.

THO' it is in many caſes unneceſſary and ſometimes hurtful to adminiſter great quantities of medicines, as ſome perſons do, from an over-carefulneſs or over-fondneſs of their Horſes, and often when they ſtand in no great need of them; yet in ſeveral kinds of ſickneſſes we find Horſes ſo dangerouſly bad, and their diſtempers ſo malign, that they are not eaſily conquered, unleſs their Blood can be thoroughly ſated with a frequent repetition of the ſame things; which however, is not only troubleſome to thoſe concerned with them, but exceeding diſagreeable to moſt Horſes, who hate to have medicines continually crammed downtheir throats. Indeed ſome Horſes are more pliable in this reſpect than others, and will take Drinks and Balls with very little trouble, and I have ſeen ſeveral Horſes learn to eat the pectoral Horſeballs with as much pleaſure as their common food; but the far greater number have a natural reluctancy to all ſuch things.

Horſes drinks to be made ſomewhat palatable.

I have frequently obſerved, that moſt Horſes have naturally a ſweet Tooth, and take things more willingly that are ſweet and palatable than things that are bitter and of an ill taſte, and therefore their medicines, but eſpecially their Drinks, ſhould always be ſo contrived as to be as little as poſſible diſagreeable and nauſeous; becauſe this always makes Horſes recoil and reſiſt all kinds of medicines. But the beſt way to remedy this evil, is to make up thoſe things into Balls that are extremely bitter and nauſeous, and waſh them down with ſome proper Drink ſweetned with Honey or Liquorice. This Method I have always found the moſt ſucceſsful to keep Horſes in a right humour for taking what medicines were neceſſary for them.

Horſeballs not to be too large.

All the Balls that are adminiſtered to Horſes, ſhould be made into an oval ſhape when they are given, and not exceed the ſize of a pullet's egg, and when the doſe happens to be large, they may be made into two. They ſhould be dipped in Oil, that they ſlip down with the more eaſe; for ſtriving much in thruſting down Balls greatly increaſes a Horſe's antipathy to ſuch things, and renders it troubleſome to adminſter medicines to them.

Some

The manner of giving them.

Some men by frequent uſe grow ſo dextrous in giving Balls, that they ſeldom miſcarry, and without fatiguing the Horſe. Theſe are ſuch as generally begin young, while their Hands are ſmall, and bring that operation into an eaſy habit. But ſome Horſes have been ſo much tired with aukward unhandy perſons, that they come to reſiſt every thing that is offered to them in that manner; others are ſo untractable, and ſo ſhy of being handled about the Mouth, that there is ſcarce any poſſibility of giving them Balls, without an inſtrument of iron to hold their Mouths open. And therefore this ſhould always be part of a ſtable furniture, where any number of Horſes are kept. Every ſtable ſhould alſo be provided with a drenching-horn; it being neceſſary to have theſe inſtruments always in readineſs, in caſe of accidents. The beſt drench-horns are thoſe that are ſmall and narrow in the mouth, and ſhaped like a ſpoon, wide in the Belly, and ſufficient to contain half a pint, more being unneceſſary for one go-down, for too large draughts are apt to ſtrangle Horſes, and ſets them into violent fits of coughing, eſpecially when they are ſhort-breathed, and oppreſſed with violent colds or ſickneſs.

Direction in givings of Drinks.

In drenching Horſes it is uſual to draw up their Heads pretty high, with a cord faſtened round the Upper-Jaw, holding up the Horſe's Head in that poſture till the Drink has run down into his Stomach, otherwiſe it is apt, with his champing, to return back and run out of his Mouth, eſpecially when the taſte is any ways diſagreeable to him. But when a Horſe is plethorick and full of Blood, when his Lungs are inflamed, his Breath ſhort, as frequently happens in very great Colds and Fevers, it then becomes troubleſome to adminiſter Drinks to him, and the fatigue it gives him at ſuch times makes it alſo dangerous, and I have ſeen a great deal of hurt done by forcing down things injudiciouſly beyond a Horſe's ability to receive them. And therefore when Horſes are greatly oppreſſed with violent Colds, malignant Fevers, Peripneumonies, or any other oppreſſive ſickneſs that affects the Lungs and Offices of Reſpiration, ſpecial care ſhould be taken in adminiſtring their medicines, eſpecially thoſe that are liquid and given with the horn. The beſt way to do this effectually and without hazard, is in the firſt place to contrive their Drinks ſo as they may paſs down with the leaſt trouble and labour, and I have always found thoſe the moſt agreeable and the leaſt fatiguing to Horſes, that are made by infuſion, without the mixture of groſs powders, which tho' they are uſual with moſt practitioners, yet are apt to clam a Horſe's Mouth, tickle the ſenſible Membranes about his Palate and Throat, and ſet him a ſtraining violently to cough, while his Lungs are ſtuffed and full, and without any free and kindly diſcharge from the Glands; which often increaſes their maladies to ſuch a degree, as fruſtrates all the ends for which theſe are given. Therefore their drinks ſhould not only be as free as poſſible from ſuch things as may ſet them a ſtraining violently to cough, while their Lungs

Groſs powders improper in Drinks.

are ſore, but ought to be made ſmooth with mucilaginous and balſamick ingredients, and ſometimes, when the caſe requires it, with oils and unctuous medicines joined with proper deterſives, of which ſufficient examples will be given hereafter, under each particular malady, where Drenches are neceſſarily to be adminiſtered.

I ſhall here mention other cautions that ought to be obſerved in drenching Horſes, to ſave the trouble of needleſs repetitions when I come to treat of the diſeaſes that require any particular management in ſuch things, which ſhall be referred to as often as may be neceſſary in the more difficult caſes.

Cautions in adminiſtring Drenches to ſick Horſes.

When a Horſe happens to be drenched only for a ſlight cold, or other ſlight diſorder, there needs no great ceremony in the way and manner of doing it, only that the Horſe be kept faſting ſome time before and after. That the ingredients be good of their kind, and ſuited to the diſtemper. That he have warm maſhes, that he be kept dry, and no ways expoſed to increaſe his cold. But when a Horſe is inwardly ſore or very much oppreſſed with ſickneſs, notwithſtanding bleeding and other evacuations have been made, and cannot be moved without great pain and labour; in ſuch circumſtances we can never uſe him with ſufficient tenderneſs; he ought to be turned about very carefully, and ſtand a few minutes to reſt before his Head is raiſed up for his Drink, and ſhould only have one or two hornfuls at a time, and then to let his head down for about five minutes, or longer, that he may recover his breath before his Head is drawn up for the ſecond draught, and ſo alſo for the remainder. After the laſt of his Drink, he ſhould be let ſtand at leaſt ten minutes before he is ſet forward to his rack, and then ſhould not be turned about ſhort in his ſtall as a Horſe that is well or but ſlightly indiſpoſed, but ſhould be carefully put back, and turned in the ſtable or in the yard, where he may have ſufficient room to fetch a compaſs, that he may not be any ways put in pain, or otherwiſe endangered by a ſudden twiſting in his Body. This method I have always followed with good ſucceſs, in drenching Horſes under the worſt kind of maladies, and have cauſed them to have ſeveral draughts given them in a day, without the leaſt inconveniency, when their diſtempers required them to be often repeated, and have had them frequently fed with a horn in the ſame manner, until they have recovered ſo much ſtrength and appetite as to feed themſelves.

Concerning GLYSTERS, and the Manner of giving them.

GLyſters are often neceſſary for Horſes in various diſorders, and may be reduced to theſe different kinds, *viz.* laxative and emollient, purgative and reſtringent.

Emollient Glyſters are thoſe made of the decoctions of the emollient Herbs, as of Mallows, Marſh-Mallows, the herb Mercury, Pellitory, Chamomile Flowers, and ſuch like, which relax the Guts, and ſoften the Excrements when they are hard and dry; and when to theſe are added an ounce of ſweet Fennel-Seed, or of Bay-berries bruiſed, they make the Glyſter Decoction; and to make it laxative, oil and treacle, or coarſe ſugar, may be diſſolved in the ſtrained decoction, while it is warm, and it will open a Horſe's Belly, and give him eaſe, by diſcharging the excrements and other contents of his Bowels, without pain or griping.

Purging Glyſters are compounded of the ſame purging ingredients, of which the various kinds of purges are made, added to the decoctions of the emollient ingredients, or for want of theſe, to two or three quarts of fat broth. The propereſt purgatives for Glyſters, are *Sena Colloquintida*, or Bitter Apple, Jallap, Lenitive Electuary, *Carrocoſtinum*, or Syrup of Buckthorn, with a handful of common Salt for a ſtimulus, when a ſpeedy and immediate diſcharge is required.

Reſtringent Glyſters are intended to ſtop violent looſeneſſes; they are ſeldom uſed, or indeed but little underſtood by the Practitioners in Farriery; but I have found them often efficacious, when no internals by the Mouth would avail, ſuch as decoctions of Oak Bark, Pomegranate Bark, Balauſtines, Red Roſes, Dyers Gall, and ſuch like, with *Diaſcordium*, *Mithridate*, or *Venice Treacle* diſſolved in them; and to theſe may be added a fourth kind, which may be termed nutritive, and are of great benefit in ſome convulſive caſes, where the Jaws are ſet ſo cloſe, that nothing can be tranſmitted into the Stomach, or where the paſſages of the Throat and Gullet are ſwell'd and inflamed, which ſometimes is ſo violent, that a Horſe is in danger of being ſtarved or ſtrangled, unleſs nouriſhment can be convey'd ſome other way than by the Mouth. But I ſhall only here inſert one ſingle Form of each kind, becauſe the proper uſe of Glyſters will be more particularly ſhewn, when I come to treat of the ſeveral maladies that require ſuch helps.

An Emollient or Laxative Glyſter.

Take Mallows, Marſh-Mallows, Pellitory the Herb, Mercury, and Chamomile, or ſuch of them as can be got, of each a large handful; Bay-Berries, and ſweet Fennel-Seeds bruiſed, of each an ounce; boil in a gallon of water to three quarts, pour off the decoction into a Pan, and diſſolve in it half a pound of Treacle, and a pint of Linſeed Oil; to make it laxative, add four ounces of Lenitive Electuary, or the ſame quantity of Cream of Tartar, or common purging Salts.

A Purging Glyſter.

Take two or three handfuls of the Emollient Herbs, as directed in the preceding; Sena an ounce; Bitter Apple, half an ounce; Bay-Berries, and Aniſeeds bruiſed, of each an handful; Salt of Tartar, half an ounce; let theſe be boil'd a quarter of an hour in three quarts of Water, then pour off the decoction, and while it is warm, add four ounces of Syrup of Buckthorn, and half a pint of Linſeed Oil.

This will purge a Horſe pretty briſkly, and may be given with good ſucceſs, when an immediate diſcharge is wanting, eſpecially in ſome ſymptomatick Fevers, in Inflammations and ſoreneſs of the Lungs, and other diſorders, which require ſpeedy relief.

A reſtringent Glyſter to ſtop a Superpurgation, or any other kind of Looſeneſs.

Take Pomegranate Bark, or Oak Bark, of either of theſe two ounces; Red Roſe Leaves green or dry, a handful; Balauſtines, *viz.* the Flowers of the Wild Pomegranate, half an ounce; boil in two quarts of Water, till one is near conſumed; pour it off from the ingredients, and diſſolve in the decoction four ounces of Diaſcordium.

This will anſwer in all common caſes where reſtringents are neceſſary: what other helps are wanting, will be ſhewn when I come to treat of a Lax and Scouring.

Nutritive Glyſters, or the conveying food by a pipe into the Fundament, may conſiſt of Broths made of Sheeps Heads, Sheeps Trotters, or any other kind of meat that is not too fat, Milk Potage, or Rice Milk ſtrain'd, or any other thing, whereby a Horſe may receive nouriſhment in any great extremity, when nothing can be conveyed by the Mouth. Theſe are ſometimes very neceſſary, and preſerve Horſes from ſtarving; but ought not to conſiſt of any thing that is too fat and looſening, otherwiſe they may eaſily fruſtrate the end for which they are given. They ſhould alſo be but ſmall in quantity, not exceeding a quart, or three pints at a time, but ſhould be often repeated.

The like caution is no leſs neceſſary in adminiſtring reſtringent Glyſters, which ought to be but ſmall in quantity, and have nothing in their compoſition that is unctuous or oily, for that would alſo defeat the end for which they are given, and the longer they lie in the Bowels before they come away, the more efficacious they always prove in ſtopping looſeneſſes; and I have often known Horſes retain them twenty four Hours without voiding any thing, and when they have dung'd, it has come away natural and of a good conſiſtence.

Cautions in adminiſtring Glyſters.

In regard of laxative and purging Glyſters, there is no need of any great reſtriction as to the quantity, which may be given to two or three quarts in ſome caſes, where the Balls of dung are black, and hardened in the Purſes of the Colon. But I would adviſe the Practitioner, never to be over liberal of his purging ingredients, even in thoſe caſes wherein purging is intended, eſpecially with ſolutions of coarſe Aloes, which I have obſerved to work and gripe Horſes to a very great degree, even ſo as to excite feveriſh, and ſometimes convulſive ſymptoms, and by that means, have added ſtrength to the diſtemper, which they were intended to abate; and I have often remark'd, the quantity of the purgatives given in Horſes Glyſters ſhould not be ſo large in proportion as thoſe given to Men, becauſe of the horizontal poſition of their Bodies, which makes them ſuddenly draw up into the ſmall Guts, where they ſometimes cauſe a moſt violent irritation, and it is difficult to manage Horſes, when any untowardly ſymptoms are cauſed thereby; and therefore it is always the ſafeſt way with Horſes, to increaſe the quantity of Oils, and other laxatives, even where purging is neceſſary, rather than make too bold with medicines that are very pungent and ſtimulating, as all the ſtronger purgatives generally are; beſides, that the poſition of a Horſe's Guts diſpoſes them to breed ſlime and viſcid matter, in almoſt all their diſorders, which is in moſt caſes more ſafely looſened and brought away by emollients, and laxatives, than by things that are more purgative, of which I have had frequent experience.

Horſes to be rak'd before their Glyſters.

It ought to be a general rule in adminiſtring Glyſters of all kinds, that the Horſe ſhould firſt be rak'd by a perſon that has a ſmall Hand, to fetch out the dung that lyes in the Streight Gut. The Hand ſhould be oil'd, that it may paſs into the Fundament the more eaſily, without hurting the Horſe, which will diſpoſe him to receive the pipe the more willingly. The Glyſter ſhould be but milk warm, for if it is more than that, it will be apt to ſcald, and make him throw it out immediately without any effect. The Farrier or Groom ſhould be provided with a pipe made of Box, *Lignum Vitæ*, or any other wood

The Size and Form of the Pipe.

wood that turns ſmooth and with a poliſh. It ſhould at leaſt be fourteen inches long, an inch thick at the noſle, and an inch and a half at the other end where the bag is faſtened, and the mouth turn'd into a ſmooth oval with little holes, in the ſame faſhion with thoſe uſed by the Apothecaries, theſe being preferable to any kind of Syringe, not only becauſe the ſyringe pipes are generally both too ſmall, and too ſhort, but becauſe the ſyringe throws in the Glyſter with ſo much force, that it ſurpriſes a Horſe, and makes him fling it out as faſt as it goes in; whereas when a pipe of convenient ſize and length is made uſe of, the liquor of the Glyſter being preſſed gently from the bag, gives him no ſurprize or uneaſineſs; ſo that there is ſeldom need of doing any more in this operation, than to hold his Tail down a minute or two with one's hand, after which he will retain it till he has motions to dung; and ſometimes Horſes will dung two or three times with mild Glyſters rightly given, before they throw them intirely out. And ſome will remain a long time in the Body, eſpecially thoſe of the emollient kind, and do great ſervice by cooling and relaxing the Bowels, and incorporate ſo with the dung, that they cannot eaſily be diſtinguiſhed from the other contents of the Guts.

A Pipe and Bag preferable to a Syringe.

The Method of Firing HORSES.

CAUTERIZING, or Firing, is often neceſſary after Strains and other accidents, which may occaſion a long continued weakneſs, or where there is a fullneſs and the part is grown hard and callous, eſpecially about the Joints, Sinews, and nervous parts; thoſe parts being compoſed of an infinite number of fibres and nervous threads, which lie ſo cloſe together that nothing but what is of the moſt powerful nature is ſufficient to relieve them when obſtructed. This is promoted in the moſt effectual manner, by burning the outſide, and giving vent to the incloſed matter to diſcharge itſelf, and ſometimes proves beneficial when all other helps have been found ineffectual.

In Firing about the Sinews and nervous parts, great care is to be taken not to go too deep at firſt, but by gentle repeated razes or lines, till they come to a pale red colour; for if the fire once touches the Sinew it will make the Horſe go lame as long as he lives; the ſame ought to be drawn pretty cloſe together on each ſide the Joint or Sinew, following the courſe of the hair without making of croſs lines, which are of no uſe in theſe parts, and are only apt to disfigure the Horſe afterward.

When the more fleſhy parts, or an obſtinate humor, that cannot be brought to ſuppuration, requires Firing, the Skin ought to be pierced deeper, in order to draw away a ſufficient quantity of matter from the part; the ſame ought to be perform'd upwards, to prevent any ulcerous diſpoſition attending it. And in ſuch caſes little ſoft doſſils of tow dipt in warm Baſilicon and Spirits of Wine, may be thruſt gently up into the orifices.

The firing inſtrument or knife, ought to be ſomewhat rounded on the edge, and gradually thicker to the back, ſufficient to keep the heat of the fire for ſome time; the ſame ſhould be rubbed clean, that no dirt or aſhes may ſtick to it, and not uſed until the flaming redneſs is in part gone off. All the ſeared parts ought immediately to be bathed with Spirits of Wine, and where nothing elſe is requiſite to compleat the cure, the place is only to be anointed with oil and bees-wax melted together.

The uſe of the fire, with reſpect to Spavins, Ringbones, Curbs, &c. is treated of in their proper places.

Some Directions concerning GELDING, DOCKING, &c.

THE common method of Gelding, is, by applying the actual cautery, and then filling the place up with ſalt, which expoſes Horſes ſometimes to accidents in theſe parts afterwards; the more ſafe way therefore is, after having opened the Scrotum or outward caſe, and turned out the Stones, to tie a wax thread round the ſtrings, to ſtop the Blood, and then cut the ſtrings between the Ligature and the Stone, applying to the wound pledgets dipt in the uſual digeſtive, mixed with Spirits of Wine; this ſecures the veſſels moſt effectually, and prevents that profuſe bleeding, which in the former way might poſſibly enſue.

As to Curtailing or Docking, the chief thing is to take care that the ſearing-iron be ſmooth and well poliſhed, and the metal well harden'd; and likewiſe that it be rubb'd very clean before it is uſed, otherwiſe the Scoriæ or ſparks that fly off the iron, may cauſe great pain, and perhaps an inflammation, to follow; neither ſhould it be applied flaming hot, leſt it bring off the burnt part along with it, in which caſe it may be difficult to form an eſchar. It may not be amiſs to take notice, that the inſtrument for Docking, be both ſharper and cleaner than what is common.

With regard to the Nicking of Horſes, the number of inciſions may be in proportion to the length of the tail, but three in general are ſufficient; the beſt dreſſing at firſt is with powdered roſin, honey, and ſpirits of wine, applying a ſoft doſſil of tow dipt in the ſame, between each nick, lapping the Tail up, as uſual. The next morning it ſhould be cut open down the back part of the Tail, and the morning after, taken off, in order to plat the hairs, and ſet the Tail; every two or three days the Tail ſhould be let down and the upper part next the Rump bathed with hot vinegar, with a little honey, and alum diſſolved in it. If the hair ſhould come off and the Tail ſhould incline to ſwell, it muſt be waſhed every day with Spirits of wine, vinegar, and the *Mel Egyptiacum*; after ſeven or eight days it will be proper to let the Horſe ſtand without the machine or pulley, for a few hours, to obſerve how he carries his Tail, and it may be neceſſary to keep the Tail up a few hours every day, till a callus is form'd.

PART III.

Of the DISEASE'S of HORSES, and their Cure.

CHAP. I.

Of the DISEASES of the HEAD.

IN treating the Diſeaſes of the Head, we are to diſtinguiſh between thoſe that are peculiar to the Head alone, and thoſe that are only the concomitants of ſome other diſeaſe, which frequently affect the Head in as ſenſible a manner as the other, tho' not always ſo dangerous in their conſequences.

I ſhall paſs over the enumeration made in books of Farriery, and their conceits concerning the Diſeaſes of the Head, which are generally full of blunders and miſtakes, and confine myſelf altogether to what I have found from experienee in various inſtances; wherein I may poſſibly give ſome ſatisfaction to thoſe who have had any competent knowledge of Horſes, and have been inquiſitive to find out their diſtempers.

Our Farriers generally include all diſtempers of the Head under two denominations, *viz.* the STAGGERS and CONVULSIONS, which indeed are ſuch as affect the Head, but in Horſes for the moſt part, ariſe from parts ſituated at a great diſtance from it. But theſe are general and imperfect terms, which few or none of our practitioners rightly underſtand, and therefore we cannot expect they ſhould often ſucceed in ſuch difficult caſes.

Whence the Diſeaſes of the Head proceed.

The Diſeaſes of the Head are properly ſuch as have their origin and immediate cauſe from the Head, of which kind are all thoſe that proceed from extravaſated matter diſcharged out of the Veins, Arteries, or Lymphæducts, either upon the Membranes that invelope and cover the Brain, or into its Sinuſes or Ventricles, whether this be the effect of wounds or concuſſions, or proceed from any other cauſe, whereby the veſſels of the Brain may be ruptured and broke. Sometimes the Membranes themſelves are indurated and grow preternaturally hard, and diſtended by long continued obſtructions, ſo as to preſs upon the tender ſubſtance of the Brain or *Cerebellum*; but this may alſo be owing to ſome previous accident or diſtemper, and in ſome old animals theſe Membranes have been found oſſify'd and turned bony; all which things muſt cauſe great diſorders in the Head. Sometimes theſe diſorders proceed from a faulty Blood, when it happens to be viſcid and ſluggiſh, or when it is of unequal mixture, ſo as to abound with particles too groſs to go along in the courſe of circulation, but are apt to ſtagnate in the *Plexus Choroides*, and other ſmall veſſels of the Brain, ſo as to preſs upon the origin of the Nerves.

But laſtly, Diſorders of the Head are many times owing to a Plethora, *viz.* an over-great quantity of Blood, which is often the caſe of Horſes that are fed high, and have neither had ſufficient exerciſe nor other proper means uſed to preſerve their Blood and Juices in a due temperament. From theſe and ſuch-like cauſes proceed moſt of the diſtempers peculiar to the Head, ſuch as *Apoplexies*, *Vertigoes*, *Lethargies*, *Epilepſies*, paralitic diſorders, and all others where the Nerves are affected ſo as to produce ſymptoms that impede ſenſe and motion, which I ſhall take in their order, and afterwards proceed to thoſe Diſorders of the Head that ariſe from the diſtemperature of other parts, of which I ſhall produce ſeveral inſtances from practice, as the readieſt way to give a true notion of thoſe diſtempers in Horſes, which uſually go under the name of Staggers and Convulſions.

Of an APOPLEXY.

IN an Apoplexy a Horſe drops down ſuddenly without ſenſe or motion, only a working at his Flanks, proceeding from the motion of the Heart and Lungs, which never ceaſes while any ſpark of life remains.

The ſigns of an Apoplexy.

The previous ſymptoms are Drowſineſs, watry moiſt Eyes, ſomewhat full and inflamed, a diſpoſition to reel, feebleneſs, a bad appetite, and almoſt a continual hanging of the Head, or reſting it in his manger, ſometimes with little or no Fever, and ſcarce any alteration in the dung or urine. When the Apoplexy proceeds from water collected in the Sinuſes and Ventricles of the Brain, the Horſe has generally beſides all theſe foregoing ſymptoms a diſpoſition to rear up, and is apt to fall back when any one goes to handle him about his Head. The reaſon of his falling backwards ſeems to be obvious, becauſe when the Head is raiſed with his Mouth upwards, the water in the Ventricles cauſes a weight and preſſure upon the *Cerebellum* and origin of the Nerves, ſo as may deprive a Horſe of ſenſe and motion at once; this is a caſe I have often ſeen, but does not prove ſuddenly mortal. Young Horſes are moſt ſubject to it, and, with proper helps and good uſage, ſometimes get over it. But when the Apoplexy proceeds from wounds or blows on the Head, or from any other cauſe producing ruptures in the Blood-Veſſels, or from matter collected in the Brain or its Membranes; or if any part of the Brain or its Membranes be indurated and grown callous by long continuance, we ſhall not only ſee moſt of the ſymptoms already deſcribed, but the Horſe will be frantick by fits, eſpecially after his feeds, ſo as to ſtart and fly into motion at every thing that comes near him. Theſe caſes are extremely dangerous, and ſeldom admit of a perfect recovery. But when Horſes fall down ſuddenly, and work violently at their Flanks, without any ability to riſe even after plentiful bleeding, ſuch Horſes ſeldom recover.

The Cure.

All that can be done in ſuch caſes is to ſtrike the Veins in ſeveral parts at once, to raiſe up the

Horſe's Head and Shoulders, proping them with plenty of ſtraw; and if he ſurvive the fit, to cut ſeveral Rowels, though in caſe of ruptured Veſſels, or if any kind of extraneous matter be lodged on the Brain or its Membranes, all theſe helps will be of little ſervice.

But if the Apoplectick Fit happens to be only the effect of a Plethora or fulneſs of Blood, from high-feeding and want of ſufficient exerciſe, or if it be the effect of a ſizy Blood, which is often the caſe of many young Horſes that have been fed for ſale, or from catching cold while the Blood is in this ſtate; though a Horſe in theſe circumſtances may reel and ſtagger, and ſometimes fall down ſuddenly, yet the cure will admit of no great difficulty.

Firſt of all bleed plentifully, and keep the Horſe for ſome time to an opening diet of ſcalded bran, and ſometimes ſcalded barley, leſſening the quantity of his hay. After two days repeat the bleeding, but in a ſmaller meaſure. If the Horſe has a Cold it will be proper to give him pectoral drinks, ſuch as are preſcribed for Colds; but if no ſymptoms of a Cold appear, it will be neceſſary, after bleeding and a ſpare diet, to give him two or three Aloetick Purges, not only to remove the Plethora and fulneſs, but to attenuate and thin his Blood, for which I would recommend the following.

Take of the fineſt Succotrine Aloes, an ounce and a quarter; freſh Jallap, two drams; Salt of Tartar, three drams; Native Cinabar, or the Cinabar of Antimony, half an ounce;

make it into a ball, with a ſufficient quantity of Syrup of Roſes or Marſh-Mallows; adding 20 or 30 drops of Chymical Oil of Aniſeeds; and make it into a ball, rolling it in Liquorice Powder, to be given with the uſual precautions.

The purge may be made ſtronger or weaker by adding or diminiſhing the Jallap. Let this be repeated two or three times, and the Horſe will probably recover without a relapſe. Powder of Antimony or its preparations, as the Liver, or *Crocus Metallorum*, or its Cinabar, or the Native Cinabar mixed with equal parts of Gum Guiacum, may be alſo given in ounce doſes, for three or four weeks, to mend his Blood and take off its ſizineſs; and exerciſe, which ought not to be omitted, as ſoon as the Horſe is able to bear it.

When a Horſe drops down ſuddenly with hard riding, or violent driving; this is a caſe that in many reſpects reſembles an Apoplexy, and all the organs of the Head are affected as in an Apoplexy; but as this proceeds only from the extraordinary rarefaction of the Blood, and its rapid motion, whereby the ſmall veſſels of the Brain, Heart, and Lungs, are extremely diſtended, ſo as to cauſe an univerſal preſſure on the origins of the Nerves, that riſe from the *Cerebellum*, and *Medulla Oblongata*; the Horſe by this means loſes all ſenſe and motion, and generally falls ſuddenly, eſpecially upon any ſudden ſtop, becauſe when the bodily motion ceaſes, the circulation of the Blood in the Veins is not accelerated in proportion to its influx from the Arteries, which ſoon produces a ſuffocation and a falling down, without ſenſe or motion. Inſtances of this kind are not uncommon, eſpecially in very hot weather, when the external heat adds greatly to the Blood's motion and rarefaction. But as we ſuppoſe, in this caſe, little or no fault in the Blood, but perhaps a *Plethora*, ot weakneſs in the Veſſels, the quickeſt and readieſt remedy is bleeding plentifully; and unleſs the Horſe die with the violence of the fall, which ſometimes happens, or by burſting the ſmall Veſſels of the Brain or Lungs, or happens to have Polipuſes in the Heart, or principal Veins, he will ſoon riſe of himſelf, or without much help, and may be preſerved from ſuch accidents in time to come, with better uſage. But when ſuch ſudden diſorders proceed from defects in the Blood and Nerves, the Horſe may be treated as in other diſorders of the Head.

Of the LETHARGY, or SLEEPING EVIL.

What Horſes are the moſt ſubject to Lethargies.

SOMETIMES Horſes are ſeized with Sleepineſs in very great Colds, eſpecially thoſe Colds that have ſome degree of malignity in them; but this ſymptom generally wears off as the diſtemper abates. But a true Lethargy ſeldom happens, unleſs to Horſes that are old, or growing old, and to ſuch eſpecially that have been work'd beyond their ſtrength and keeping. I have known many Horſes ſeiz'd with lethargick diſorders after very hard labour, when there has not been ſufficient time allowed for food and reſt, by which nature has received ſuch a ſhock, that ſome have dy'd, notwithſtanding all manner of proper applications have been made to recover them. Others have recovered with much pains and labour, and ſome of thoſe that have recovered, were not afterwards able to go through any very great fatigue,

The ſigns of a Lethargy.

When a Horſe falls into a Lethargy, or grows lethargick, he generally reſts his Head with his Mouth in the manger, and his Pole often reclined to one ſide, which denotes a very great weight, ſtupor, and inſenſibility. As there is ſeldom any great pain, or inward ſickneſs, he will ſhew an inclination to eat, but for the moſt part falls aſleep with his Hay, Bran, Oats, or whatever elſe is given him, in his Mouth, and ſeldom chews, but ſwallows it down, but when he is jogg'd and rous'd, and unleſs when his Head is kept moving, he preſently drops into ſleep again; and if a Horſe continues any time in this ſtate, he falls into an Atrophy, or univerſal decay, eſpecially if his Lungs, Liver, or any other of his principal *Viſcera* be faulty, or if he has received any hurt in his Head.

The good and bad ſigns diſtinguiſh'd.

A Lethargy in a Horſe may be cured, if he is not very old and paſt his vigor. It is always a good ſign if a Horſe has a tolerable appetite, and in ſome meaſure retains his Smell and Taſte, ſo far as to eat up a maſh with a good guſt, and without doſing over it, tho' he eats but little hay, and at the ſame time drinks pretty freely without ſlabbering; and if he lyes down and riſes up carefully, though it be but ſeldom. But if a lethargick Horſe does not lye down, if he is altogether ſtupid and careleſs, and never takes notice of any thing that comes near him; if he dungs and ſtales ſeldom, and even while he ſleeps and doſes, it is always a bad ſign. If he runs at the Noſe a thick white matter, it may relieve him; but if a viſcid gleet that ſticks to his Noſtrils like glue, and if this increaſes, and turns to a profuſe running of ropy, reddiſh or greeniſh matter, with an increaſe of his Lethargy, it is an infallible ſign of a great decay of nature; and, as the name of this diſtemper imports, will prove deadly.

The Cure. As to the Cure, if the Horſe be young, and has fallen into this diſtemper, either upon catching cold in ſome damp place, or has ſuffered from any hard uſage, there may be great hopes of his recovery, becauſe the diſeaſe in this caſe is in ſome meaſure ſymptomatical, and the right way is to begin with bleeding, but not in too great quantity, for lethargick Horſes are ſeldom able to bear the loſs of Blood, unleſs they be young and luſty. After bleeding give the following drink, which conſiſts both of pectorals and cephalicks; for in ſome lethargick diſorders, the Lungs are much affected, to which regard muſt be had in all the applications that are made.

Take Pennyroyal, Coltsfoot, and Chamomile Flowers of each a handful; Rue and Hyſſop of each half a handful; Liquorice Root ſliced an ounce; infuſe in two quarts of boiling Water, in a deep pan cloſe covered, and when it has ſtood to be cold, pour it off into another veſſel.

At the ſame time make the following Tincture.

Take Aſſa Fœtida, and the beſt Ruſſia Caſtor, of each half an ounce; Saffron one dram; cut the Aſſa Fœtida and Caſtor into bits, and ſhred the Saffron, then tye them in a Rag, and let them ſteep all night in a pint of ſtrong Mountain Wine, or in the ſame quantity of Spirit of Wine and Water, about three parts Water to one of the Spirits.

In the morning give a pint of the firſt infuſion, with a quarter of a pint of this tincture. The ſame quantity in the afternoon, and ſo the days following, ſqueezing the rag with the Caſtor and Aſſa Fœtida, in each doſe, leaving it always to ſoak in the tincture, till there is occaſion to uſe it again, and that no taſte or colour remains in it. The firſt three or four days let the Horſe have Glyſters, for in all ſtupifying diſtempers, Horſes are apt to be coſtive. Emollient Glyſters are the beſt, made of fat Broth, or a few Mallows, and Marſh-Mallows, boil'd in Water and Milk, which is better, with an ounce of ſweet Fennel Seeds, adding half a pint of Linſeed Oil, and the ſame quantity of common Treacle, to three pints or two quarts of the Decoction.

After theſe things have been comply'd with, and that the ſleepineſs wears off, and the Horſe begins to move with ſpirit and vigor, give him one of the following balls every morning faſting, for a fortnight or three weeks.

Take Cinabar of Antimony, or Native Cinabar and Aſſa Fœtida, of each half an ounce; powder of Caſtor, two drams; beat this maſs into a ball with a ſufficient quantity of Oil of Amber.

After the uſe of theſe things, that the Horſe comes to feed heartily, two or three mild purges may be proper, juſt ſuch as will thoroughly open his Body, and help to attenuate his Blood, as the following.

Take Diapente half an ounce; Succotrine Aloes, one ounce; Cinabar of Antimony, and Salt of Tartar, of each two drams; make it into a ball with Syrup of Damaſk Roſes, adding thirty drops of chymical Oil of Aniſeeds, or a ſpoonful of Oil of Amber.

This may be given with the uſual precautions. It will work partly by Dung and partly by Urine, *&c.* and with little or no griping, and render the cure more perfect.

It is uſual in lethargick diſtempers, and all other diſorders of the Head, to open the Skin of the Forehead, and to put a piece of ſome bulbous root into the orifice, and to cut ſeveral other iſſues in the Neck, the Breaſt, the Belly, and the Thighs, but theſe are often hurtful in Lethargies, eſpecially when the diſtemper is attended with decay and weakneſs; and I am the more convinced of this, becauſe I have ſeveral times cured Lethargies in Horſes that were not very old, without any rowels or other iſſues, by the method above preſcribed, and inſtead of large evacuations, or allowing any thing to leſſen the quantity of the Blood, have indulged them in pretty liberal feeding, divided in ſmall portions, and exhibited at proper intervals.

Of the EPILEPSY.

The Epilepſy deſcrib'd.

THE Epilepſy is that diſtemper which in the human Body goes more peculiarly under the name of Convulſions. It ſometimes ſeizes periodically, but often at uncertain times, and for the moſt part ſuddenly, with little or no previous ſymptoms, tho' in Man there is generally preceding the fit, exceſſive pain in the Head, Drowſineſs, Stupidity, Loſs of memory, *&c.* which cannot be ſo clearly diſtinguiſhed in the brute creatures.

The common people call this diſtemper the Falling-ſickneſs, or Falling-evil, when it ſeizes ſuddenly and univerſally, that the perſon falls down in the fit, but is called a particular convulſion, when a part or member of the Body only is affected. But it ought to be conſidered, that particular convulſions do not always proceed originally from the Head, but from pain and weakneſs in ſome member, by which the muſcular Fibres are either contracted or become immoveable.

When

The Cauſes from whence Epileptick Diſorders proceed, eſpecially in Horſes.

When the Convulſion is univerſal, it generally proceeds from all the ſame cauſes that produce Vertigoes, Apoplexies, and Lethargies, to all which it has a near affinity; and in Horſes I am apt to think epileptick diſorders are often owing to blows on the Head, or hard ſtraining, eſpecially when the Horſe has not been hardened and prepared for labour, either of which may hurt the Brain, or its Membranes. And ſometimes Epilepſies proceed from a *Plethora* or fulneſs of Blood, when it is groſs and ſizy, which however, is not ſo dangerous as the Convulſions that ariſe from the above recited cauſes. But when Convulſions happen to old Horſes, they generally prove incurable, becauſe nature being languid, gives but little aſſiſtance to the operation of medicines, or any other helps made uſe of for their recovery.

I have ſeen Horſes ſeized with epileptick diſorders, but were miſtaken by the Farriers for the Gripes, and it is no wonder, that perſons ſo meanly educated as they generally are, make ſuch miſtakes, in regard Horſes are often convuls'd in the Gripes when the pain is violent, eſpecially in that ſort they call the twiſting of the Guts, which is not what people generally imagine it to be, but an inflammation of the Guts, which ſometimes ends in mortification, and then the Convulſions are only ſymptomatical; and though they are often violent, yet affect a Horſe in a different manner from thoſe of the epileptick kind.

In all kinds of Gripes, whether they proceed from diſorders of the Guts, or retention of the

How epileptick Diſorders are diſtinguiſhed from the Gripes in Horſes.

Urine, a Horſe is often up and down, rolls and tumbles, and when he goes to lye down, generally makes ſeveral motions, with great ſeeming carefulneſs, which ſhews the ſenſe he has of his pain, and if he lyes ſtretched out at any time, it is generally but for a ſhort ſpace. But in the Epilepſy, the Horſe reels and ſtaggers, his Eyes fixed in his Head, has no ſenſe of what he is doing, ſtales and dungs inſenſibly, runs round, and falls ſuddenly, ſometimes immoveable with his Legs, ſtretched out as if he was dead, except only a very quick motion of his Heart and Lungs, which makes him work violently at his Flanks, ſometimes an involuntary motion, and ſhaking of his Limbs, which I have ſeen ſo violent in a Horſe, that he has beat and ſpurn'd his litter, and the pavement along with it. And I have known Horſes continue in this manner agitated, and ſometimes motionleſs, for the ſpace of three hours and upwards, when every body has looked upon them to be dying, and have been ſtrangely ſurpriſed at their recovery. At the going off of the fit the Horſe generally foams at his Mouth, and the foam white and dry, like that which comes from a healthful Horſe when he champs upon his bit.

Two very extraordinary caſes of epileptick Horſes.

Two very extraordinary caſes of this kind happened to me ſome years ago. One of them was in the Guards, the other in the Horſe Grenadiers. The firſt, juſt as he was mounted to go into the park for exerciſe, all of a ſudden reared up, and fell backwards upon his rider, whom he bruiſed miſerably, by his great weight and the deadneſs of his fall. The Horſe lay a conſiderable time, and all the while beat the pavement ſo inceſſantly, that it was dangerous for any one to come near him, otherwiſe than to thruſt ſome litter under him with the handle of a fork. His Eyes were ſet in his Head and drawn upwards, and foamed at his Mouth, heaving and breathing very hard all the time. He recovered this fit without any other apparent diſorder than a ſtiffneſs and weărineſs with the violent agitation he was in during the paroxyſm, like what happens to ſome tired Horſes after a long journey, and in a few days he ſeemed to be perfectly well and freed from all diſorder; but in about a month afterwards he relapſed, and fell into a more violent and laſting fit in the ſtable, while he was eating a feed of oats: he lay in this fit many hours, for the moſt part motionleſs, with his Limbs ſtretched out and foaming at his Mouth; but at laſt, when upon the decline of the fit, he was given over for dead, he all of a ſudden gathered up his Legs, raiſed his Head, as if he had only been aſleep, and after looking about him a little while got up without any great difficulty, and in a few days, with the help of ſome Cephalick medicines, he recoved his appetite and the perfect uſe of his Limbs.

The Grenadier Horſe was ſent from guard, and being got home with much difficulty after bleeding, fell down before he could be got into his ſtall, and lay acroſs the ſtable on a bed of litter many hours before the fit left him.

The Cure.

The method made uſe of for the recovery of both theſe Horſes was as follows. Firſt of all they were bled pretty plentifully, though, if either of them had been low in fleſh, or had come off any hard continued duty, or had been very old, I ſhould have been ſomewhat ſparing of their Blood. As it was impoſſible to adminiſter any thing to them during the paroxiſm or fit, I only took care to have them kept in a right poſture, that they might neither hurt themſelves nor thoſe that looked after them. When the fit was over, the following ball was adminiſtered with a proper drink to waſh it down, *viz.*

Aſſa Fœtida, half an ounce; Ruſſia Caſtor pounded, two drams; Venice Turpentine, the ſame quantity; Diapente, an ounce; made into a ball with Honey and Oil of Amber.

The Drink was made thus, *viz.*

Penny Royal and Miſletoe, of each a large handful, Valerian Root, an ounce; Liquorice, half an ounce; Saffron, two drams; infuſed in a quart of boiling Water, and ſtanding about two hours on the ingredients, it was poured off and adminiſtered after the ball.

This was repeated ſometimes once, ſometimes twice a day, at firſt, and afterwards once in two or three days. The Grenadier Horſe was perfectly well in leſs than a week, and had no return. The other continued to take balls longer, with this alteration, *viz.*

Cinabar of Antimony, ſix drams; Aſſa Fœtida, half an ounce; Anſtolochia, Myrrh and Bay-berries, of each two drams; made into a ball with common Treacle, a ſufficient quantity, and about a ſpoonful of rectify'd Oil of Amber.

Inſtead of the Drenches a large handful of Miſletoe boiled in three pints of ſpring water, was mixed in a pail with his common drink, which he drank without any reluctancy, the Miſletoe having little or no taſte or ſmell: and as to its virtue in convulſive caſes the learned reader may conſult *Riverius*, Sir *John Colbatch*, and many others. This was continued about three weeks mixed with the Horſe's water, after the Cephalick balls and other Medicines were left off, and in the mean while were given laxative Purges and Glyſters, at proper intervals, to keep his body open and prevent a relapſe. The Glyſters may be made with Chamomile Flowers and Miſſletoe, with Oil and Treacle added to the decoction. The Purges are made of the ſame decoction, by diſſolving four ounces of Lenitive Electuary, and the ſame quantity of *Cremor Tartari*, or *Sal Mirabile*.

Another extraordinary caſe.

Another Grenadier Horſe was ſoon after ſeized with Convulſions that were not ſo violent as either of the two already recited, but of a more complicated kind and more obſtinate. The Convulſions pulled his Eyes continually upwards, that nothing could be ſeen but the whites, ſometimes for near two hours, the paroxiſm or fit uſually laſting ſo long in the beginning. When the fit was over, the Horſe would eat ſcalded bran and hay, what was ſufficient to ſuſtain him, and drank gruel plentifully. He reel'd and ſtaggered very much, but never fell down. He was treated in the ſame manner as the others, and in his drinks Aſſa Fœtida and Caſtor tied up in a rag, lay always in the infuſion, and was ſqueezed in every draught. At firſt his drinks were repeated twice a day with balls, and afterwards once a day, for ſome time, and once every other day, or ſeldomer, as the diſtemper declined. Two men were employed continually in rubbing his Head and Neck, Cheeks and Temples, to keep his Mouth free, which was often locked up for ſeveral minutes, and would probably have continued ſo, if this method had not been made uſe of, to prevent his being jaw-ſet. Other parts of his Body were alſo rubbed, where any cramp or convulſive ſymptom appeared, which, with the help of his medicines, brought him into a continual breathing ſweat, which laſted near three weeks. His cloaths were often changed and dryed, and the effect of the Caſtor was particularly remarkable in promoting the Diaphoreſis; for his ſweaty cloaths, and the whole ſtable where he ſtood, were ſtrongly perfumed with it. This Horſe was perfectly cured, and has continued well and free from any relapſe for many years.

About twelve years ago I was employed to another very fine Horſe of the coach-breed, much in the ſame condition with this laſt, who, after his recovery from the Fever and Convulſions, continued blind upwards of three months, and yet afterwards came gradually to his perfect ſight, and had no relapſe.

Horſes not ſo apt to relapſe in convulſive Diſorders as Men.

It may be worth while to obſerve that Horſes and other brute creatures often get clear of the very worſt kind of nervous diſtempers without any return, unleſs they be old, and then the ſymptoms never totally leave them; or if any great damage happens to the Brain, or other parts contained within the Skull, the caſe is then always deſperate. But when they do not proceed from theſe or other ſuch dangerous cauſes, but a faulty Blood, they often ſtand a better chance than men in the like circumſtances, who are apt to have their epileptick fits return upon every fright or ſurpriſe, and perhaps from no other cauſe but their own fears and apprehenſions, which ſo far affect the nervous ſyſtem as often to bring on the very evils they dread; ſo that the diſtemper at length grows habitual, and in ſome almoſt periodical; whereas thoſe creatures that are incapable of any degree of reflection, are no ways liable to ſuch impreſſions, but forget all the evils they ſuffer of pain and ſickneſs, without the leaſt apprehenſion of a return, whereby their bodies recover ſufficient ſtrength to reſiſt freſh aſſaults.

Of the PALSY, and Paralytick Diſorders.

THE Palſy has an affinity with the foregoing Diſorders, ſo far as the Nerves are affected in both, but with this difference, that in caſes meerly convulſive, the Muſcles are ſtrongly contracted or ſhook by involuntary motions, Difference between the Palſy and other diſorders of the Head.

tions, proceeding from the irregular ſallies of the animal ſpirits, whereas in paralitick diſorders the Nerves ſeem to be clog'd, and the courſe of the ſpirits totally or in part obſtructed; for in a Palſy the uſe of ſome part of the body, or ſometimes, when it derives its origin from the Head, the uſe of one whole ſide is taken away, the parts are flaccid and relaxed, without any capacity of motion, and ſometimes without ſenſe or feeling, in which reſpect a Palſy affects the Body in a manner quite different from an Epilepſy. When the Palſy ſeizes one whole ſide, it is called by the writers in phyſick *Hemiplegia*, and when ſingle parts or members only are affected, it it called *Paraliſis particularis*.

The ſigns.

The ſigns are, loſing the uſe of ſome particular member, totally or in part, particularly the Limbs, ſometimes one, ſometimes more, eſpecially the hind Legs. This kind is pretty uſual, and tremors or ſhakings ſometimes attend; but of the many Horſes I have had under my care, I do not remember above two that were ſeized with the *Hemiplegia, viz.* that kind of Palſy that ſeizes all the Muſcles on one ſide. But in the year 1743, many Horſes were ſeized with a nervous diſtemper, that very much reſembled an *Hemiplegia*, which chiefly affected one ſide, and even pulled their faces ſomewhat awry, being of a mixed kind, partly paralitick, and partly convulſive, of which further notice will be taken when I come to treat of Epidemick diſeaſes.

When the Palſy ſeizes one Limb only, it is not often dangerous, and is leſs ſo when there is a continual ſhaking and an involuntary motion; but when it ſeizes both Limbs behind, the caſe is then very troubleſome, and the Horſe is not able to ſtand, but when he is ſupported by ſome means or other, until he has recovered the uſe of his Limbs, at leaſt in ſome degree. In an *Hemiplegia* the uſe of one ſide is totally taken away, and the Horſe falls ſuddenly; and tho' at firſt he will ſtrive very much to riſe, yet it is neither in his own power, nor in the power of Man to raiſe him up ſo as to ſtand; for tho' a Horſe can move his Limbs on one ſide, yet he has not the leaſt power on the other, and his Limbs are ſo flaccid and relaxed on the paralitick ſide, that when they fall they double under him; and this caſe, in a Horſe, is ſo deſperate, that there can ſcarce be any poſſible way found out to recover him.

Prognoſticks.

Horſes that lie out late at graſs upon cold clay grounds, often come up with numbneſs in their Limbs, which they in ſome degree loſe the uſe of for a ſeaſon; but this is not a true ſpecies of a Palſy, unleſs when the Head is alſo affected, but rather of a Rheumatiſm. But a true Palſy generally takes its riſe from a very ſizy and ſluggiſh Blood, proceeding, for the moſt part, from high feeding, and want of ſufficient exerciſe, from bad provender, blaſts, and bad air; ſometimes from hard working and want of good keeping, and frequently from old age, which is the moſt dangerous. When paralitick diſorders happen to old Horſes that have been delicately kept, or on the contrary have been in bad keeping and hard worked; if the diſtemper ſeizes one whole ſide, it is ſcarce worth while to attempt a cure. If the Palſy ſeizes only particular parts in old Horſes, the cure will be difficult, and for the moſt part only palliative; for there will always remain ſomewhat of numbneſs and inſenſibility in thoſe parts that will render ſuch Horſes of little uſe. But paralitick ſymptoms in young Horſes proceeding from cold blaſts, bad provender, or any other cauſe, whereby the Blood may be contaminated, are often removed without much difficulty.

The cauſe of paralitick diſorders.

In curing the Palſy the ſame internals that are made uſe of in apoplectick and convulſive diſorders, are here alſo proper, with bleeding, rowels, and other outward helps, ſuch as warm ſtimulating embrocations. One of the beſt of this kind, and what I have frequently applied with good ſucceſs in paralitick numbneſſes, is as follows.

The Cure.

Take Oil of Turpentine, four ounces; Nerve Ointment and Oil of Bays, of each two ounces; Camphor rubbed fine in a mortar, one ounce; rectify'd Oil of Amber, three ounces; incorporate theſe together into a liniment; to this may be added an ounce of Tincture of Cantharides.

Proper external applications.

Let the affected part be firſt well rubbed with a woollen cloth, that the liniment may penetrate with the more eaſe; then take a ſufficient quantity thereof, and anoint or embrocate the part thoroughly, working it well in with a warm hand, and as often as the liniment begins to dry in, renew it again. This method ſhould be continued till the numbneſs goes off, and the Horſe ſhews that he has recovered the uſe of his Limbs. If the deadneſs and lameneſs be chiefly in the hind parts, in that caſe the liniments may be alſo rubbed into the ſpines of the Back and Loins, from whence the principal Nerves that go to the Limbs derive their origins; but in this caſe the Tincture of Cantharides ſhould be omitted. Rubbing the parts often is of great uſe in all ſuch caſes, and therefore ought never to be neglected. If the Head be affected on one ſide, ſo as to draw the Horſe's Mouth awry, the Fore-head, Temple, and Cheek on that ſide, ought alſo to be well rubbed and embrocated with the above liniment: and when this is the caſe, internals ought not to be laid aſide; becauſe we may ſuppoſe, with good reaſon, that the diſtemper has taken its riſe from the Head. If a Vertigo happens, or if the lameneſs be univerſally on one ſide, but not an univerſal deprivation of ſenſe and motion, as in the *Hemiplegia* or dead Palſy; in the firſt, *viz.* in a Vertigo, all objects ſeem to turn round; ſo that a Horſe, while any ſenſe remains, with the leaſt uſe of his Limbs, will naturally follow the object in his motions; in which caſe all thoſe things that have been recommended for the cure of an Apoplexy, are alſo proper, with rowels and outward applications. In the latter, *viz.* when the lameneſs is altogether confined to one ſide, the Horſe, by leaning on the ſound ſide, will alſo turn round towards the lame ſide, having the uſe of his Limbs on the ſound ſide to ſupport him, but not ſo freely on the other; but as this may happen without a Vertigo, the beſt remedy here is mild Purging, and a liberal uſe of Embrocations. A mixture of muſtard-ſeed, freſh ground, with camphorated ſpirits frequently rubbed into the diſeaſed Limbs, will be of great uſe, *viz.* an ounce of the muſtard ſeed to half a pint of the camphorated ſpirits, and towards the latter end of the cure Opodeldock may be uſed with good ſucceſs, mixed alſo with camphorated ſpirits. If a Lethargy happens, which is not unuſual in the diſtempers of the Head, few evacuations will be required; beſides now and then a Glyſter with rowels on the Neck and under the Jaws, and the richeſt cordials and cephalicks, are neceſſary in all lethargick ſymptoms, as Caſtor, Aſſa Fœtida, Salts of Hartſhorn, Sal Armoniack, and all other volatiles; but this can only be done to Horſes that are of ſome value.

I have omitted treating the Vertigo as a particular diſtemper of the Head, becauſe it is a ſymptom that ſometimes attends all other Cephalick diſorders, and requires the ſame method of cure.

CHAP. II.

Of the Diſtempers that affect the Head, ariſing from parts at a diſtance from the Brain and origin of the Nerves.

HAVING treated of thoſe maladies that are peculiar to the Head, which cauſe the Staggers and Convulſions in Horſes, I ſhall now proceed to thoſe that affect the Brain in a no leſs ſenſible manner, though they take their riſe from diſtant and remote parts; and which I have obſerved to be more frequent among Horſes than thoſe that take their riſe immediately from the Head, and therefore ought to be carefully diſtinguiſhed by thoſe who undertake the cure of Horſes.

Every one muſt needs be ſenſible, that violent and exceſſive pain in any part of the Body will excite Convulſions, but eſpecially when the pain is in thoſe parts where the Nerves abound moſt, as the Stomach, the Guts, the Midriff, and tendinous parts of the Limbs; and therefore we find Horſes often convulſed in the Gripes and Strangury, when the nervous parts of the Guts and Bladder are affected with violent pain and inflammation. Sometimes Horſes become convulſed with wounds in the Feet, when the Tendons in thoſe parts are pricked and bruiſed, or in any other part where the Tendons are wounded; but eſpecially punctured wounds in the Joints with forks, or with ſharp ſplinters, cauſe very great anguiſh and exceſſive pain, and ſometimes with a diſpoſition to a Gangrene and Mortification, which often excite Convulſions. Theſe things are plain, and viſible; and it is no leſs plain that inward impoſtumations, eſpecially in the Stomach, Lungs, and Midriff, will produce Convulſions that are moſt dangerous and often prove deadly. And further, we may often obſerve Horſes have convulſive diſorders, from a plenitude and fulneſs of Blood, which however is ſometimes eaſily removed, as alſo thoſe that proceed from a plenitude of the Stomach, or when the Guts are crammed with dung and aliment, eſpecially when the dung, by long continuance, is grown hard and dry. All theſe things will cauſe convulſive Diſorders, with the Staggers; but I ſhall now proceed to treat of thoſe things more particularly.

CONVULSIONS from the Stomach, and other principal Bowels.

OF this kind, is that deplorable diſtemper ſo well known, but little underſtood, which locks up the Jaws of a Horſe ſo cloſe, that it is almoſt impoſſible to force them open by any means whatever, either to receive food or phyſick.

Solleyſell calls this malady the Stags Evil, or Palſy in the Jaws, though in moſt of its ſymptoms, it is directly contrary to a Palſy. With our *Engliſh* Farriers, it goes under the general name of Convulſions, and indeed it ſoon turns to an univerſal Cramp or Convulſion, that ſeizes all the Muſcles of the Body of a Horſe. But the true nature and cauſe of this extraordinary Convulſion ſeems not as yet to have been rightly underſtood, either by our own Countrymen, or the Writers of foreign Nations. It almoſt always ſeizes ſuddenly, and without any previous ſymptoms, ſuch as the want of appetite, and the other ſigns of ſickneſs; for I have often known Horſes clear their racks in the night, and in the morning drink their water, and eat their allowance of corn as uſual, and in leſs than half an hour have had their Mouths cloſe ſhut up, and their whole Bodies convulſ'd.

Jaw-ſet Horſes.

In what manner a Horſe appears in this diſtemper.

As ſoon as a Horſe is ſeiz'd in this manner, his Head is rais'd with his Noſe towards his rack, his Ears prick'd up, and his Tail cock'd, looking with an eagerneſs, as an hungry Horſe when hay is put down to him, or like a high-ſpirited Horſe when he is put upon his mettle; inſomuch, that thoſe who are ſtrangers to ſuch things, when they ſee a Horſe ſtand in this manner, will ſcarce believe any thing of conſequence ails him; and I have ſeen ſuch perſons greatly ſurpriz'd when they have been told of the danger; but they are ſoon convinc'd, when they ſee other ſymptoms come on apace, that his Neck grows ſtiff, cramp'd, and almoſt immoveable; and if a Horſe in this condition lives a few days, ſeveral knots and ganglions will riſe on the tendinous parts thereof, and all the Muſcles both before and behind, will be ſo much pull'd and cramp'd, and ſo ſtretch'd, that he looks as if he was nail'd to the pavement,

ment, with his Legs ſtiff, wide, and ſtradling; his ſkin is drawn ſo tight on all parts of his Body, that it is almoſt impoſſible to move it, and if trial be made to make him walk, he is ready to fall at every ſtep, unleſs he be carefully ſupported; his Eyes are ſo fixed, with the inaction of the Muſcles, as gives him a deadneſs in his looks. He ſnorts and ſneezes often, pants continually with ſhortneſs of breath; and this ſymptom increaſes continually till he drops down dead, which generally happens in a few days, unleſs ſome very ſudden and effectual turn can be given to the diſtemper.

Theſe are the uſual ſigns of that fatal diſtemper, which here in *England*, paſſes more particularly under the name of Convulſions; and tho' it differs in many reſpects from the Epilepſy above deſcribed, both as to its ſymptoms and cauſe, yet it is the moſt univerſal in its effects of all other convulſive diſorders.

Young Horſes from four to ſix years old, are the moſt ſubject to it, and the large coach breed, and all kinds of draught Horſes, more than ſaddle Horſes. The moſt uſual cauſe of this univerſal Cramp or Convulſion, is from Bots in the Stomach, which being bred there from the eggs, generally come to their maturity in the months of *April*, *May*, or *June*; this being the ſeaſon wherein this diſtemper chiefly prevails among young Horſes; and when it happens at any other time of the year, or to Horſes above ſix years old, that have been in buſineſs, it is then for the moſt part owing to other cauſes, as Impoſtumations, or Ulcers

The Cauſes of this fatal diſtemper, for the moſt parts from Vermin in the Stomach.

Ulcers in the Midriff, or ſome other of the principal *Viſcera*, which I have ſeen; but theſe inſtances are not ſo frequent, as thoſe from vermin in the Stomach, and even the latter are not ſo frequent ſome ſeaſons as others, which I have alſo obſerved; and therefore they may probably be owing to unwholſome food, wherein the eggs of thoſe animals have been depoſited, but chiefly to high, foul feeding, for this ſort of Convulſion is moſt uſual among thoſe Horſes that have been kept up and pamper'd for ſale, with little or no Exerciſe, which diſpoſes their Blood to putrefaction, whenever they come to be heated in their work.

I ſhall not here take up the reader's time, with the different opinions and conjectures of phyſicians, concerning the conveyance of the eggs of inſects into the Stomach, or into the ſtreight Gut, where they are moſt uſually found; but it is certain the Stomach, as well as the ſtreight Gut, becomes a proper *Nidus* to bring them to life. They appear to be no other than large maggots, with ſharp prickly feet on both ſides of their Bellies. Thoſe in the ſtreight Gut are commonly of a yellowiſh colour, and are no ways dangerous; but in the Stomach they are generally of a larger ſize, and more inclined to the orange, but without any other ſpecifick difference. The eggs from whence theſe Bots are produced, are diſperſed in cluſters all round the lower Orifice of the Stomach, where it is thickeſt, and where probably, the muſcular action is moſt languid, that part being as it were conſtantly diſtended by the weight of the aliment. They are laid under the inner Coat, or thin Membrane of the Stomach, which covers them all over, as the eggs of thoſe vermin that blight the trees in the ſpring, are covered over with a fine filamentous Membrane; and as theſe deſtroy the young tender leaf, and curl it up into folds, ſo thoſe, when they come to form and life, they burſt through the inner Coat of the Stomach, with their Breech and Tail ſtreight outwards, and their trunks fixed ſo into the muſcular or fleſhy Coat, that it ſometimes requires a good pull to diſengage them. From the Blood of this muſcular Coat they draw their nouriſhment, which they ſuck like ſo many leeches, every one ulcerating and purſing up the part where it fixes, like a honey comb. I have ſeen in the ſame Stomach, part of the eggs covered over with the inner Membrane, and thoſe of various ſizes, ſome no larger than a millet-ſeed, others about the ſize of peas, and ſome larger, ſtretching out the inner Coat, and juſt burſting through it, others in full life, and in thick cluſters, ſucking Blood from the muſcular Coat. By this gradation, the ſymptoms ſuddenly increaſe, and often make ſuch a quick havock in the Stomach, as renders the diſtemper incurable. From all which we may infer, that perhaps the Muſcles of the Stomach are not endowed with ſo great a force, as *Bellini*, and many other modern Phyſicians, have imagined, but that ſomething elſe may be required in digeſtion, beſides the bare muſcular action: But be that as it will, we may eaſily account for the convulſive ſymptoms that attend this malady, and their univerſality, from the diſtribution of the Nerves over the Coats of the Stomach, which appear to be more numerous there, than in any other of the *Viſcera*, and have their derivations by communicating branches both from the Head, and from the Spines of the Back and Loins; and this is the reaſon of what we ſee from daily experience, that whatever offends the Stomach in any degree, always affects the Head and other parts of the Body. But theſe things do not often cauſe dangerous Convulſions in thoſe creatures that have a capacity to vomit; but when Ulcers are thus ingendered in the Stomach of a Horſe that has not this capacity, and all the powers and faculties thereof thereby deſtroyed, the caſe muſt then be very deſperate, and the whole Body, and all its parts, muſt of conſequence be convuls'd.

Sometimes Ulcers or Impoſtumes in the Midriff and other principal Bowels, produce the ſame effect.

The like ſymptoms are alſo in ſome meaſure produced from ulcerations in the Diaphragma or Midriff, by the vaſt diſtribution of twigs of Nerves, all over the tendinous parts thereof, having their derivations and communications in the ſame manner with thoſe of the Stomach. Beſides, the Midriff being placed near the center of the whole Body, and its muſcular action being in concert with the Muſcles of the Breaſt, Shoulders, Lower Belly, and Loins, it is no wonder if Impoſtumations there, or in any other part near it, ſhould alſo bring on univerſal Convulſions.

How to diſtinguiſh the one from the other.

But it is of uſe, in the cure of theſe maladies, to diſtinguiſh between an univerſal Convulſion that takes its riſe from vermin in the Stomach, and when it is produced by a diſtemperature of the Midriff, or any other of the principal Viſcera, which will alſo teach us how to make a right Prognoſtick in theſe and all ſuch extraordinary caſes.

The good and bad Prognoſticks.

When the diſtemper ariſes from Bots in the Stomach, it ſeizes ſuddenly and without any previous notice. The Convulſions in this caſe often ſeize a Horſe at once, and the Horſe appears with all the ſymptoms above deſcribed; and when his Mouth is ſhut ſo cloſe, as even ſometimes happens at the very firſt onſet of the diſtemper, ſo as it cannot by any means be opened, the caſe is then exceeding dangerous, and the cure almoſt impracticable; but when the Mouth is ſo far free from the Convulſions, that a medicine may be adminiſtered, tho' it be with ſome difficulty, and that he can make a ſhift to lick up a little bran, and ſwallow a little white water or gruel, there may be ſome hopes of a recovery; eſpecially if the Neck is not exceſſively ſtiff and cramped, which is always a bad ſign. But if a Horſe is able to turn his Head pretty freely, and can move his Eyes backwards and forwards, or ſide-ways, theſe may be reckoned promiſing ſigns, and the Horſe in ſuch circumſtances, may be cured with proper care and right applications.

But when this ſort of univerſal Cramp or Convulſion proceeds from a diſtemperature of the Midriff, or any other of the principal Viſcera, there are always ſome previous ſymptoms that go before, by which it may be diſtinguiſhed from the Convulſions that proceed from Bots and vermin. When this is the caſe, a

Horſe firſt of all falls off his Stomach, grows gradually weak, feeble, and diſpirited in his work, turns ſhort-breathed with the leaſt exerciſe. Theſe are the ſigns which I have obſerved to go before this diſtemper, tho' they are alſo common in many other inward diſorders, and are generally owing to ſome miſmanagement, as the working Horſes beyond their ſtrength, eſpecially when they are growing old by working, on a ſtarving low diet, and from want of gradual cooling, and not allowing proper intervals of reſt, and ſuch like neglects. And tho' the diſtemper advances more ſlowly in this caſe than in the other that proceeds from vermin, yet it is no leſs dangerous, becauſe the true cauſe is ſeldom known till it be too late to provide a remedy; whereas a Horſe that turns convulſed by vermin in his Stomach, has a better chance, not only becauſe it generally happens to young Horſes that have been neither broke by age nor labour, nor do we ſuppoſe any previous indiſpoſition in the Blood more than what is uſual to young Horſes from foul feeding, and want of ſufficient Exerciſe.

The Cure, when it proceeds from Bots in the Stomach.

In order to the Cure, it will be neceſſary to obſerve carefully theſe diſtinctions; and if a young Horſe that has been but lately in the dealer's hands, happens to be ſeized ſuddenly, and if this falls out in the ſpring and beginning of the ſummer, without any previous ſymptoms or foretokens of ſickneſs, we may reaſonble conclude the diſtemper to be owing to Bots in the Stomach, and to no other cauſe. In which caſe no time is to be loſt, but before his Mouth is quite ſhut up, the following ball may be given.

Take Mercurius Dulcis and the powder of Diapente, of each half an ounce; make it into a ball, with a ſufficient quantity of Conſerve of Roſes, and roll it in Liquorice Powder or Flour, and waſh it down with a hornful or two of warm Water.

I have ſeen very extraordinary effects from this and the other preparations of Mercury in ſuch caſes. When this ball has been adminiſtered make the following infuſion.

Take Pennyroyal and Rue, of each two large handfulls; Chamomile Flowers, one handful; Aſſa Fœtida and Caſtor, of each half an ounce; Saffron and Liquorice Root, ſliced, of each two drams.

Let theſe be infuſed in four quarts of boiling water, and when the infuſion has ſtood till almoſt cold, give three or four hornfuls, and repeat the doſe three or four times a day, letting the ingredients continue always in infuſion, and the Caſtor and Aſſa Fœtida tied in a rag, which may be ſqueezed into the drench-horn, as has been directed in the other Cephalick diſorders. For tho' we ſuppoſe the Convulſions in this caſe to be only from the ulceration of the Stomach, yet the ſame method ought to be followed as if they proceeded immediately from the Head and origins of the Nerves, both with reſpect to internals and externals; and therefore I would recommend what has been above directed for outward application in paralitick caſes, or the following, which I have always found to be of great uſe in all cramps and convulſive contractions of the Muſcles, *viz.*

Nerve Ointment, or the Ungentum Martratum, of either of theſe four ounces; Ointment of Marſh-Mallows, ſix ounces; Muſtard-ſeed ground, and Flanders Oil of Bays, of each two ounces; Oil of Amber, two ounces; with a ſufficient quantity of camphorated Spirits of Wine, to make it into a thin Liniment.

This muſt be rubbed into the Cheeks, Temples, the Neck, Shoulders, Spines of the Back and Loins, and wherever there is the greateſt ſtiffneſs. Muſtard Seed alone, freſh ground, worked well into the affected parts with camphorated Spirits, may alſo be uſed ſucceſsfully to Horſes of ſmall value, for outward application, and internally the following cheap drink, which may be given two or three hornfuls once in four hours.

Take Rue, Pennyroyal, and Tobacco, of each a handful; Aſſa Fœtida, an ounce; boil them in a quart of Forge Water, and let the decoction ſtand conſtantly on the ingredients.

But ſometimes Horſe's Mouths are locked up ſo cloſe in this diſtemper, that ſcarce any thing can be adminiſtered that way; and if this ſymptom is not ſpeedily removed, the caſe ſoon proves deadly. I have had many convulſed Horſes under my care, ſome of which have died, others have been perfectly cured; tho', whenever Horſes are ſeized in this manner, the practitioners in Farriery, generally give them up for dead; and their method is to try if they can get any thing down, and when they find that impracticable, they adminiſter Glyſters, and fill them full of rowels and other iſſues; though, by reaſon of the contraction and cloſeneſs of the Skin, ſcarce any of them come to a kindly digeſtion. I ſhall therefore relate ſome few inſtances of cures that were made by my direction, which, if rightly underſtood, may be of uſe to thoſe who practiſe Farriery, and will ſhew how much apparatus is neceſſary in removing this deſperate diſtemper, which cannot poſſibly be effected without ſome expence and very great labour.

Inſtances of very extraordinary caſes of this kind.

About twelve years ago a young Troop-Horſe was ſeized with this ſort of Convulſion, but not ſo ſeverely as in ſome other caſes that will be related. It began with the Staggers, and ſudden fits of Starting, which made him rear up, and often get his Fore-feet into the manger. His ſudden fits made me apprehend his diſtemper to proceed from vermin in his Stomach, which is a conſtant ſymptom in all the Convulſions that proceed from this cauſe; but as his Mouth was not ſo conſtantly and cloſely ſhut as in many the like caſes where I have been concerned, we could therefore at times make a ſhift to convey ſome medicines into him, and though he could not at firſt eat his common food, yet he could, by allowing him time, ſip a pretty good quantity of water-gruel, which ſuſtained him till the medicines took effect. He was cured with mercurials and the other things above directed, and afterwards by the help of mild Aloetick Purges.

Much about the ſame time a young Drum-Horſe was alſo ſeized within a few days after he came out of the dealer's hands. He was ſo far relieved in a fortnight's time, that he could make a ſhift to eat ſome ſcalded bran, with a ſmall quantity of hay, though very leiſurely, which was given in handfuls, and frequently by the hand day and night, to keep his Jaws moving. Two men were alſo employed continually to rub his Head, Neck, and Cheeks, and wherever elſe the ſtiffneſs appeared moſt, and theſe were relieved by others, for a Horſe in this condition never lies down till the Convulſions of the Muſcles are in a great meaſure removed; and therefore if the rubbing had been omitted it would have been difficult to ſave him. And I have always obſerved, if a convulſed Horſe ſtands two hours without rubbing, the ſtiffneſs and inſenſibility increaſes, and certainly for want of this management many Horſes have been loſt, that otherwiſe might have been ſaved. An ounce of Aſſa Fœtida was alſo tied up in a ſtrong coarſe linen rag, and put between his Grinders, to champ on. This was rolled in the cloth, and tied at both ends with two pieces of packthread, which were faſtened to his collar, and one ſide was always untied when any thing was to be given him either of food or phyſick. This Horſe recovered perfectly in about two months time, and has been ſince abroad in *Germany* and the *Netherlands*, were he has undergone a great deal of fatigue, and returned home with the troop, in perfect health.

I could add ſeveral inſtances of this kind, which for brevity's ſake I am obliged to paſs over; and therefore ſhall only take notice of one more, which for its ſingularity deſerves very well to be regarded, and that was the caſe of a young Horſe in the other troop of grenadiers. He had been but a few days taken into the troop when he was all of a ſudden ſeized with this kind of Convulſion, which was firſt diſcovered as he was leading out to water at the afternoon's watering-time. I happened then to be preſent, and perceived him come reeling along, with his Noſe turned out, his Eyes fixed and immoveable, with all the other ſigns that uſually attend this fatal diſtemper, and when he came to the trough could not reach the water, becauſe of the cramp and ſtiffneſs of his Neck, and when it was held to him in a pail could not drink, though he ſhewed an eagerneſs for it, his Mouth being ſhut up ſo cloſe, that it was ſcarce poſſible to put a knife between his Teeth. This was ſudden, as all theſe maladies generally are, for he had eat his common allowance juſt before he was ſeized, except a ſmall matter of hay, which he had partly pulled out of the rack into the manger.

We found it impracticable to adminiſter any kind of medicine, till by rubbing his Cheeks, Jaws, and Temples, and his whole Neck, for a conſiderable time, we made a ſhift, with great difficulty, to thruſt down part of a calomel ball on the end of a ſmall ſtick, and then to pour into his Noſtrils a very ſmall portion of a ſtrong cephalick drink, thinking by that means to convey the ball downwards into his Stomach, which however had but little effect any further than this, that he had not ſuch ſudden fits and agitations as I have ſeen in others in the like circumſtances, but continued more quiet; neither did his Fever increaſe, as uſually happens when the diſtemper is gaining ground; but all this while his Mouth continued ſo much ſhut, that he could neither eat nor drink for three weeks, only by continually rubbing his Jaws and Neck, he would ſometimes make a ſhift to ſuck about a handful of ſcalded bran, or ſometimes a little oatmeal moiſtened with warm water, but in ſo ſmall a quantity, that it is poſſible he might have ſtarved if other methods had not been taken to keep him alive.

I have often obſerved, that the forcing the Jaws open by violent means, puts a Horſe into ſuch agonies, that it rather increaſes than abates the ſymptoms; and therefore I contrived to give him both his food and phyſick by the fundament, through a pipe fourteen inches long, by which he ſeemed to receive great benefit, for we could perceive the ſymptoms abate daily. His Flanks grew more quiet, he ſtood more ſtill and free from ſudden fits and ſtartings; all which ſymptoms are uſual in the continuance and increaſe of this diſtemper. The Glyſters were contrived in the following manner.

Rue, Pennyroyal, and Chamomile Flowers, of each a handful; Savin and Box, of each half a handful; Garlick, an ounce; Caſtor and Aſſa Fœtida, of each half an ounce.

In making this glyſter the herbs are to be boiled firſt in two quarts of water in a covered veſſel, the ſpace of ten or fifteen minutes, with the Caſtor and Aſſa Fœtida cut in ſmall pieces and tied in a rag, not only to ſave the Caſtor from waſte, but that it may be ſqueezed into ſeveral glyſters. Then the garlick to be added and continued cloſe covered over the fire the ſpace of ten minutes longer, after this the liquor to be poured off into a pan or any other convenient veſſel; then add of Linſeed oil, or treacle, of each four ounces, and laſt of all half an ounce of unrectified oil of amber, the treacle and the oils are to be mixed with the decoction when it is put into the bag.

This glyſter was repeated once a day for a fortnight, and by way of diet, was given every day three or four quarts of milk boiled with oatmeal and water, a bag with a long pipe being left in the ſtable for that purpoſe. He retained every thing that was adminiſtered that way, which he generally ſucked up of himſelf without force. This perhaps was in ſome meaſure owing to the nature of this univerſal Convulſion, which cauſes ſuch irregular motions in the Midriff and Muſcles of Reſpiration, as in ſome meaſure inverts the natural motions of the Guts; and for the ſame reaſon, Horſes in this condition ſeldom dung, but ſtale often, and when they dung, it drops from them in a manner inſenſibly, and often no more than one or two balls at a time. And therefore, as this Horſe could receive little or no ſuſtenance by the Mouth, I was determined to make trial how far he might receive nouriſhment by way of injection backwards, whether a thin diluted food thrown into the Streight Gut, and from thence over into the ſmall Guts, by the help of a long pipe, might not find a paſſage into the Blood through the Lacteals, eſpecially there being experiments of this kind made on the human Body, both in adminiſtring food and phyſick, particularly in giving the bark by way of glyſter, in Agues and Intermitting Fevers, which has been found ſucceſsful, where the Stomach was not able to bear its auſterity. It was upon this footing that I treated him in the manner I have deſcribed, which I imagined was not altogether without its effect; for he ſcarce eat in three weeks what was ſufficient to ſuſtain him one day; ſo that it was impoſſible for him to have lived had he not been ſupported by what was thrown into his Bowels; and tho' by this means he loſt his Fleſh very ſenſibly, yet he ſtill retained a good deal of vigor and vivacity. He had two men conſtantly to look after him, and theſe relieved by others, who had orders to rub his whole Body often, which greatly helped to relax his Skin, and remove the crampineſs of his Muſcles; and tho' he had not for the firſt fortnight recovered the uſe of his Jaws, yet we obſerved him daily to move with leſs ſtiffneſs, and often to lick in his manger as if he craved after food. He alſo breathed with leſs difficulty, and had ſeveral other good ſigns. This encouraged me to try another experiment with Opium, from the known quality of that drug, in relaxing the

Animal Fibres, which I therefore thought might be of ſervice to remove the contractions of the Muſcles about his Mouth and Jaws, which all this while continued in ſome meaſure obſtinate, and without ſome powerful relief might prove fatal, even though the original cauſe was in a great meaſure taken away. Therefore I cauſed half an ounce of crude Opium to be diſſolved in one of his glyſters, which was followed with theſe circumſtances, that the Horſe ſoon lay down; he began to point his ears backwards and forwards, and could move his Neck pretty freely, and his Mouth was ſo far at liberty, that he took his Drinks with little or no difficulty, and could eat hay and bran ſufficient to ſuſtain him. He likewiſe moved his whole body ſo readily, that we could walk him an hour every day: And that I might follow up what I imagined had been ſucceſsfully begun by the opiate glyſter, I ordered him ſome days after an ounce of the common *Matthews*'s pill, which contains about two drams of Opium, and the ſame quantity of Aſſa Fœtida made into a ball, which was given at his Mouth, and waſhed down with a hornful of gruel, which was done with great eaſe, his Mouth being grown pretty pliable. This ball being once more repeated, he recovered daily, being continued for ſome time in the uſe of the Drinks, which were now adminiſtered only twice a week with good rubbing, and as ſoon as he began to recover his Fleſh, was gently purged. By this method he was perfectly cured, without any other ill effect than a blemiſh on one Eye, cauſed by the violence and ſtrong contraction of the Muſcles during the Convulſions, which indeed were as bad as any I ever ſaw, even where they proved the moſt fatal.

Thus, I judged it might be proper to relate the hiſtory of this cure in its whole proceſs, including all the principal circumſtances thereof, wherein it may be obſerved that I have ſcarcely in any reſpect followed the common method of repeated bleedings, purging glyſters, and rowels; all which might be proper, if the Convulſions proceeded either originally from the Head, or from a viſcid ſizy Blood, or from wounds or contuſions, *&c.* But as I have diſcovered this kind of Convulſion or univerſal Cramp in young Horſes, uſually to take its riſe from the cauſes above aſſigned, to wit, from vermin in their Stomachs, I have therefore in ſuch caſes bled, but ſeldom. I made uſe of no purging glyſters, becauſe the irritation made in the Bowels, and a diſcharge from thence can be of little or no uſe, but hurtful, where a powerful revulſion is not abſolutely neceſſary, eſpecially where a Horſe cannot feed. And as for rowels, I have ſeen the farriers put a rowel on each ſide of the Neck, one in the Belly, one on the Forehead, and one on each Thigh; but the ill ſucceſs they meet with has made them not ſo fond of that kind of practice of late, as formerly, for the Skin is drawn ſo tight in all parts, that the rowels ſeldom come to a kindly digeſtion, but are apt to mortify, and thereby encreaſe the Horſe's miſery; and therefore I have ſeldom ordered rowelling in this caſe, but under the Jaws, or in the Breaſt, there being no room for rowels any where elſe.

What effect opiates may have in deſtroying vermin, I ſhall not offer poſitively to determine, whether by rarifying the Blood to a great degree, and conſequently augmenting its motion, or by any other quality may cauſe their eggs to come looſe from their adheſions, as we ſee tobacco-water deſtroy the eggs of vermin on the leaves of plants. In theſe things we have no way to come at any certainty, without experiments, though it is likely by its relaxing quality it may be uſeful in ſuch an univerſal cramp, eſpecially when the management of it happens to fall in good hands. But all are agreed, that Mercury and ſeveral of its preparations are efficacious in deſtroying of vermin, both by its weight and ſubtilty diſpoſing it to paſs thro' the minuteſt capillaries, and alſo by its globular figure, which no kind of change by whatever *Menſtruum*, or other management it is diſſolved, can alter; and therefore I have given it with good ſucceſs in various ſhapes, to deſtroy vermin, ſometimes crude, ſometimes the calomel, or *Mercurius Dulcis*, and in ſome very urgent caſes of this kind, I have exhibited a dram, ſometimes two drams of turbith mineral; but whoever ventures upon theſe and ſuch-like preparations, ought both to underſtand the nature of the medicine, and the conſtitution to which it is adminiſtered, concerning which ſee farther in the Farcy. I could relate many more inſtances of cures of this kind which I have made ſince, and particularly three very lately, which were all managed in the ſame manner, by giving their food and phyſick by way of glyſter, and as they differed only in ſome few circumſtances from thoſe already related, I ſhall forbear to go into the particulars of them, but proceed to thoſe Convulſions which are owing to other cauſes.

The Cure, when the diſtemper proceeds from the Midriff.

When this diſtemper does not proceed from vermin, as ſometimes happens to old Horſes that have been ſtrain'd in working, or after ſome very bad ſurfeit, then the mercurial preparations will be in a great meaſure unneceſſary or perhaps hurtful, and therefore recourſe muſt be had to the cephalick drinks above inſerted, to bleeding and moderate purging, and proper alteratives. Rubbing and the uſe of liniments externally, is here alſo of great ſervice, and frequent glyſters of the emollient kind. In this caſe a Horſe muſt be treated with great gentleneſs, becauſe there is often ſome inward decay, which will admit of no rough dealing. I have ſeen in Horſes that have dy'd of this diſtemper, the Midriff ulcerated, which being extremely full of branches and twigs from the Phrenick Nerves, that communicate with all the other Nerves of the Body, and being itſelf a kind of Centre Muſcle, that acts in concert both with the Muſcles of the Breaſt and Lower Belly, makes it therefore the more eaſy to account for this univerſal cramp, which when it proceeds from hence, may be looked upon for the moſt part as the harbinger of death, unleſs the ſymptoms are ſo moderate, that there is room for adminiſtring medicines, and that the

Horſe is able to take a ſufficient quantity of food to ſuſtain him; and if the ſymptoms do not increaſe but abate, it is poſſible for him to recover, tho', if the Horſe be old, or of a very weak conſtitution, he will ſcarce be worth the expence and pains. Some I have known recover and do very well, that have had all the ſymptoms of a diſeaſed Midriff; and in this caſe, beſides the uſe of the cephalick medicines, rowels, with good feeding, are of great uſe, as ſoon as the Horſe's Skin is looſened enough to bear them.

I have taken notice, that this univerſal Convulſion may alſo take its riſe from a faulty Blood, in which caſe it may be removed without much difficulty, unleſs the Horſe be very old, as in the inſtance I am going to relate.

An univerſal Cramp which began in the hind Legs of a Horſe.

A Horſe in the third Troop of Guards, was ſeized with this univerſal Cramp or Convulſion, which began in his hind parts, quite different from that which proceeds from vermin, or a faulty Midriff, both which ſeize ſuddenly. At firſt nothing appeared but a cramp in his Hind Legs, to which ſome Horſes are often ſubject, and generally come well with moving till they are warm, and therefore the Groom that looked after him, trotted him twice a day in the riding-houſe, after which it went off for a time, but in a few days he was all over convulſed, with his Jaws ſet, yet not ſo cloſe but we could with ſome difficulty give him both balls and drinks. The Horſe was about eight years old, and had been near three years in the troop. His Blood was exceeding poor and viſcid, reſembling paſte, and the loſs of it gave him no relief. I concluded from hence, and from other circumſtances, that his diſtemper proceeded altogether from a depraved, weak, ſizy Blood, and not from vermin, for when the Convulſions happen to young Horſes from vermin, their Blood is indeed ſizy, but at the ſame time rich and florid; but it was quite otherwiſe with this Horſe; the Convulſions began in the Limbs, where the motion of the Blood and Juices is moſt languid, and from the conſent that all the Muſcles have one with another, aſcended gradually like a fire that begins in the bottom of a houſe, and riſing upwards, would ſoon conſume the whole fabrick, unleſs ſpeedily extinguiſhed. This Horſe was cured without much difficulty, tho' it was ſome time before he came to a perfect ſtate of health. The medicines adminiſter'd to him were the ſame that have been already inſerted in the cure of Epilepſies, and other cephalick diſorders, with the Cinabar balls, which were proper to attenuate and take off the ſizineſs of his Blood. In ſuch caſes a ſmall quantity of wine may alſo be indulged, with ſaffron, Virginia ſnakeweed, and Contrayerva roots to be mixed with the drinks, and in ſome caſes a tincture of ſteel, to warm and invigorate the Blood, *viz.*

The Method of his Cure.

Take Caſtor, and Aſſa Fœtida, of each half an ounce; Rue and Pennyroyal, of each a large handful; Filings of Iron ty'd up in a bag, half a pound; infuſe theſe in two quarts of boiling Water, and keep the infuſion cloſe covered by itſelf for uſe. Alſo take Virginia Snakeweed, Contrayerva, and Valerian, of each half an ounce; Saffron and Cochineal, of each two drams; infuſe theſe in a quart of White Wine, letting it ſtand in the ſun, or by a warm fire, twenty-four hours.

Take a pint of the firſt infuſion, and a gill of this tincture for a doſe, which may be given once a day or oftener, as the ſymptoms require.

If the Horſe's Mouth continues pretty much lock'd up, that he receives his drinks with difficulty, ſufficient intervals muſt be allowed between every hornful; and indeed this caution is as neceſſary here as in thoſe caſes where we ſuppoſe inflammations or impoſtumes in the Lungs. But good rubbing and the uſe of nervous liniments externally, are no leſs neceſſary than internals; for ſuch is the nature of all cramps and convulſive contractions, that unleſs the convulſed parts be continually warmed with ſtimulating things, and frequent frictions, the contractions will grow ſtronger and more obſtinate; and further, becauſe convulſed Horſes are apt to be exceeding coſtive, it is neceſſary to give glyſters often, till they come to the uſe of their Jaws, and are able to feed tolerably well: After which purges are exceeding proper, not only to attenuate the Blood, but to drain off the ſuperfluous ſize that clogs the Muſcles and hinders the vibrations of the Nerves, or the free intercourſe of the animal ſpirits. The following will be found the moſt beneficial in this caſe, wherein the common purges of plantation Aloes would be hurtful, being more apt to create nervous diſorders than to cure them. Therefore,

A proper purge for a convulſed Horſe.

Take Succotrine Aloes, one ounce; the cleaneſt Myrrh, half an ounce; Aſſa Fœtida and Gum Ammonaicum, of each two drams; Saffron, one dram; beat the ingredients till they come into a paſte, then form the whole into a ball with Syrup of Marſh Mallows, and roll it in liquorice powder or flour.

Theſe may be given one in a week, and continued three weeks or a month, or longer, if needful. They will juſt open the Horſe's Body, and work as an alterative to cleanſe and purify the Blood, and ſo gently that the Horſe may be uſed moderately in any kind of buſineſs in the intervals between the Purges.

CONVULSIONS and STAGGERS, from a Retenſion of the Dung and Aliment.

THIS is a caſe I have ſeveral times met with; and tho' it is ſeldom dangerous where there is no complication with ſome other diſtemper, yet it ſometimes proves fatal, when it happens not to be rightly underſtoood. And I have known in ſome inſtances the Stomach and Guts ſo extremely crammed, that it has ſcarce been poſſible to adminiſter any relief.

The cauſe.

Theſe ſtoppages proceed from various cauſes, and only affect the Head when they happen to be of ſome continuance; ſometimes they are cauſed by full feeding, with the want of air and ſufficient exerciſe, eſpecially in hot dry weather, and in conſtitutions naturally hot; but moſt uſually from the nature and qualities of their food, as bad hay, or any other bad provender, as rank clover, when it has imbibed moiſture from the damp fogs, which renders them ſo tough, that they lie like a wad, and diſtend the Guts ſo as to impede their proper functions. Other things have alſo the ſame effect, as ſoiling Horſes with any kind of green herbage, when it chances to be grown too old and tough, and has loſt its ſucculency; eſpecially when it has been cut too long before it is uſed. All theſe things often cauſe ſtoppages in the Guts and firſt Paſſages, and will ſometimes excite ſuch diſorders, as by their continuance affect the Head in a very ſenſible manner.

The ſigns thas accompany this kind.

When the Staggers and convulſive ſymptoms ariſe from ſuch cauſes, the Horſe generally looks dull about the Head, with his Eyes ſwoln, is feeble, reels and totters as he moves, his Mouth is generally ſtiff, but not quite ſhut up, as in the caſes above deſcribed; is ſhort-breathed upon the leaſt motion, and for the moſt part a ſhort cough, becauſe the fulneſs of the Stomach and Guts bolſters up the Midriff ſo as to preſs continually upon the Lungs, and thereby interrupts reſpiration; and as a conſequence of this, the motion of the flanks is irregular, tho' ſeldom violent. For the ſame reaſon he ſcarce ever lies down till ſome relief is given him, becauſe the extreme fulneſs of the Stomach and Guts cauſes great uneaſineſs, whenever he offers to bend his Body, in ſo much that many when they ſee a Horſe in this condition, are apt to imagine he has received ſome hurt in his Back or Loins. Other ſigns are coſtiveneſs; for he is apt to ſtrain much when he goes to dung, and has many fruitleſs motions; he ſtales but little, and that of a dark colour, which often proceeds from the obſtructions the Gall meets with in its paſſage from the Liver into the Guts; and thereupon the Yellows ſometimes alſo inſue.

The Cure. In order to the Cure, let ſome perſon that has a ſmall hand rake him thoroughly, and bring out the dung that lies in the Streight Gut, which is generally hard, and made up of little ſmall Balls, of a blackiſh colour, and quite dry; without moiſture. After this let him have plenty of emollient oily glyſters, made of Mallows, Marſh-Mallows, the herbs Mercury, Pellitory, and ſuch like; but in places where theſe cannot be readily got, they may be made of pot liquor, water-gruel, or any kind of meat broth. To three pints or two quarts of the liquor may be added a pint of Lintſeed Oil, and half a pound of Treacle, or a pound of brown Sugar, to be given milk warm, and repeated every day, at leaſt till his dung comes away with eaſe, and grows ſoft. His diet ſhould be the beſt hay, ſcalded bran, ſcalded chaff, or boiled barley, till he has been thoroughly emptied, and for ſome time afterwards. At firſt his dung that comes away with the glyſters, will be in ſmall hard balls, and ſometimes along with it a naſty putrid ſlime, which when once diſcharged, gives great relief; but by the continuance of the glyſters, and the open diet, the dung ſoon alters, and comes away in ſuch great loads, that one would ſcarce imagine it could paſs through the fundament; but as ſoon as this happens it brings ſure relief, and a way is made for gentle lenitive purges, which in this caſe are always the moſt ſucceſsful, and nothing dangerous.

Take Lenitive Electuary and Cream of Tartar, of each four ounces; brown Sugar, two ounces; mix them in a pint and a half of mild Ale; the Ale to be made hot, that the Cream of Tartar may be the more eaſily diſſolved in it; after that the Sugar, and laſt of all the Lenitive Electuary.

This is to be given in the morning, upon an empty Stomach, blood-warm, and it will probably begin to work before night, and ſeldom makes a Horſe ſick, as the ſtronger purges are apt to do, when a Horſe is full and coſtive; ſo that he will drink warm water, or warm gruel, without reluctance. It may be repeated three or four times, allowing always two or three days reſpite between each draught, keeping him to an open diet, with proper exerciſe, till he recovers his uſual vigour.

By this method ſeveral Horſes have been cured that were very much affected in their Heads with convulſive ſymptoms, where the event has ſhewn that this affection was plainly owing to a ſtoppage of the aliment and excrements hindering a proper digeſtion; of which I ſhall mention one inſtance of a Horſe that was ſent home from *Hounſlow-Heath*, when the troops were encamped there. He was ſo much convulſed, that he could neither eat his hay nor corn, and his Neck ſo ſtiff that he could not reach to drink. The man that led him was forced to ſtop almoſt every hundred yards, becauſe of the ſtiffneſs of his Limbs, and the ſhortneſs of his Breath, by the ſhutting up of his Mouth. However, when I ſaw him, he did not appear to be near ſo much convulſed as thoſe that have vermin in their Stomachs, or Impoſtumations in the inward parts. By working his Mouth I could open it a little way, neither were his Limbs ſo ſtiff nor ſo much contracted. I obſerved him to be very coſtive, for he often made motions to dung, but could not, except two or three little ſmall hard black balls, which ſhewed the neceſſity of opening oily glyſters. He had two every day at firſt, which brought him to dung pretty freely, and ſoon recovered the uſe of his Jaws, ſo as to eat hay and ſcalded bran. After this he had opening drinks adminiſtered to him, ſuch as the laſt inſerted; and the dung that he voided in a courſe of mild purgation, was in vaſt loads, and muſt have lain a conſiderable time pent up within him, being not unlike what we ſee rotting in a dunghill, both in ſmell, colour, and conſiſtence; and when this load was once diſcharged, he ſoon recovered, and without the help of other means.

A very remarkable caſe of an extreme plenitude andfulneſs of the Stomach and Guts of a Horſe that proved mortal.

I ſhall conclude with a very extraordinary caſe of this nature, that proved mortal. It was of a Horſe belonging to the ſecond troop of Grenadiers, at graſs, about three miles from town, along with ſome others of the ſame troop. He was obſerved to lag behind his companions, by himſelf, for ſeveral days, which always denotes ſickneſs and diſorder; for a Horſe that is in health, tho' he may ſometimes ſtray by himſelf, yet he will not continue long from his company. But this was not much obſerved by the guard who looked after the Horſes, till he was ſcarce able to move at all, otherwiſe his death might have probably been prevented. He was ſo extremely oppreſſed, that ſeveral men had much ado to get him to town, and were obliged to ſupport him all the way to keep him from falling. His Eyes were ſo ſet in his Head, that he took not the leaſt notice of any thing that came near him, but appeared the ſame as if he had been already dead, and with every motion he reeled and bore forwards, ready to tumble on his Noſe, if he had not been held up. His Legs were ſtretched out and ſtiff, without the leaſt uſe of his Joints, and by their coldneſs ſhewed the Blood to be altogether come to a ſtagnation in thoſe parts. So that in a few hours after his coming to the troop ſtables, he dropped down dead as a ſtone, without the leaſt ſtruggle.

I was greatly ſurprized when I ſaw this Horſe opened, to find his Stomach and all his Guts, both large and ſmall, filled and crammed to ſuch a degree, that it would have been im-

poſſible,

poſſible, by any means whatever, to have procured the leaſt vent. For all the aliment that was in his Stomach, and the dung in the inteſtinal tube, from one end to the other, was entirely dry, and without moiſture; and before they were ripped open, appeared as hard and full crammed as a *Bolognia* ſauſage, without the leaſt yielding or ſoftneſs in any part. The matter contained in them was no leſs extraordinary; the Stomach being filled with acorns, ſloes, oak-leaves, and ſuch other things as he could pick up about the hedges, ſome green and ſome withered; for it was now towards the latter part of the year. The contents of the Guts were chiefly leaves, neither well chewed nor digeſted, with a mixture of graſs; but there was little or no graſs in his Stomach, but chiefly acorn-cups and leaves, which was diſtended to its utmoſt extent, ſo as to keep the Muſcles at their full ſtretch; by which their action, which is neceſſary in digeſtion, was altogether at a ſtand.

I am apt to imagine that this Horſe, who was upon a very rank after-maſh, had been ſo ſurfeited that he came to loath his graſs, and his appetite being depraved, had taken to thoſe things that were acid and ſour to the taſte, which muſt have greatly aggravated his diſtemper by their reſtringent and binding quality. I rubbed the contents, both of his Stomach and Guts, between my hands, which crumbled like dung dried in the ſun, without the leaſt drop of moiſture or any ill ſavour; for there was no room for air to be pent up in them, wherein is the ſtench, chiefly, that is felt in opening the inteſtines of dead animals; and indeed, it was ſomewhat extraordinary that he lived to come to this extremity, where the muſcular action of the Stomach, and the periſtaltick or vermicular motion of the Guts, by which the expulſion of the excrements is forwarded, muſt in all probability have been loſt for ſeveral days. I can aſſign no other reaſon for his holding out ſo long, but that he was in all reſpects extremely ſound, and little elſe to be ſeen but a beginning inflammation in ſome of his internal parts; which, conſidering how unmercifully he was crammed, could not be otherwiſe expected.

This happened about 17 years ago, in a very wet ſeaſon, when the Horſes were ſo clogged, that many of them began to fall off their fleſh before they were taken up.

We meet with ſome inſtances among men of voracious appetites, that have died ſuddenly after an exceſſive meal, by filling their Stomachs to ſuch a degree, that the ſtrongeſt emeticks could have no effect upon them. But theſe inſtances in men are not very frequent; for if a man's Stomach is not filled too ſuddenly to its full extent, (which has ſometimes happened to thoſe who have bruitiſhly eat for a wager) he will go nigh to vomit of himſelf, and ſo get rid of his enemy. But an exceſſive fulneſs of the Stomach and Guts muſt always create great diſorders in a Horſe, who has no natural diſpoſition to vomit; ſo that all poſſible means muſt be uſed to preſerve the paſſages downwards free and open, according to the method above deſcribed, *viz.* by glyſters, lenitive purges, and an opening diet, that being all the chance he can have for his life, in ſuch circumſtances.

CHAP. III.

Of the Diſeaſes of the EYES.

THE Diſeaſes that affect the Eyes of Horſes are neither ſo numerous nor ſo much complicated, as thoſe that affect the human Eye, though Horſes are much more apt to go blind than Men, when once diſorders happen in their Eyes, unleſs they be ſpeedily removed; the reaſon of which will, in ſome meaſure, be accounted for, in the proſecution of this ſubject.

The Antients very circumſtantial in deſcribing the diſeaſes of the Eyes.

The ancients were wont to reckon up a great many diſeaſes in the human Eye, by giving names to almoſt every accident or blemiſh that happened on any part thereof, accounting theſe as ſo many diſtinct maladies. And tho' this was indeed an inſtance of their great accuracy and induſtry, yet it has multiplied the diſeaſes of the Eyes beyond what they really are, and has rendered the ſtudy of thoſe things very difficult, eſpecially to young practitioners and to the unlearned. The *Italians*, *French*, and other foreigners, who in ſome preceding centuries wrote profeſſedly on the diſeaſes of Horſes, for the inſtruction of the farriers in their times, have very much copied after the antients, by deſcribing almoſt as many diſeaſes in the Eyes of Horſes as the firſt writers in phyſick have deſcribed in the human Eye; and by enumerating a great many names and diſtinctions in different ſpecies, or rather appearances of the ſame diſeaſe, have led their followers into a great deal of perplexity, by treating ſymptoms in many caſes, as original maladies.

It is true, Horſes have ſeveral of the ſame diſeaſes happen to their Eyes that are incident to Men, and ought to be treated nearly in the ſame manner; but as their food is more ſimple, and as they are not liable to fall into intemperance, ſo there is ſome difference alſo in theſe maladies; and I have ſeldom met with any ſuch thing as a ſtrumous or ſcrophulous Sore or Ulcer, or, in other words, any appearance of what we call the Evil in the Eye of a Horſe, or of any ſymptom derived from a ſcrophulous Blood: But moſt of the maladies that affect their Eyes, proceed either from external accidents, as blows, wounds, and contuſions; or from internal cauſes, as Fevers, Surfeits, and ſuch like; or from a natural weakneſs, and ill conformation of the Eyes, which I have reaſon to believe is often hereditary, and therefore the moſt difficult to cure.

Blows and Contuſions on the Eyes.

HORSES frequently meet with Blows and Contuſions on their Eyes, which are more or leſs hurtful in proportion to their degree; for a ſlight Blow, or a ſlight Bruiſe, or a Bite of another Horſe, tho' at firſt painful, and apt to make the Eye ſwell and run down with water, yet ſuch are often cured only by bathing the Eye with cold ſpring-water, which repels and hinders a Flux of Humors falling upon it. But if the Eye be any ways inflamed and ſwoln, it will be neceſſary to bleed directly, and to apply ſome cooling Cataplaſm to the Eye, ſuch as are made of the pulps of roaſted or boiled apples, cleared from their huſks and ſeeds, or Conſerve of Red Roſes, ſpread on a doubled linen cloth, and bound gently over the whole Eye; or a pledget ſpread with Alum curd, applied in the ſame manner, and renewed as often as it turns dry. I ſeldom uſe any other thing in ſuch caſes, beſides a tincture made with Red Roſes, and a few grains of Sugar of Lead, in the following manner.

Take two drams of Red Roſe Buds, either freſh or dried; infuſe them in half a pint of boiling Water, in the manner of making Tea; when it has ſtood to be cold, pour off the infuſion, which will be of a reddiſh colour, and add to it a ſcruple, which is twenty grains, of Sugar of Lead.

The Sugar or Salt of Lead will make the Roſe Tincture of a muddy green-colour, when it is ſhook. The beſt way to uſe it is thus; bathe the Horſe's Eye and Eye-Lids all over, with a bit of clean ſpunge or clean rag dipped in it, three or four times a day; and it will ſeldom fail to make a cure in a ſhort time of any Blow or Bruiſe on the Eye, that has no uncommon ſymptoms, or where the Eyes are not naturally weak or previouſly diſeaſed. The Roſe Tincture is a good reſtringent and ſtrengthener, and the Sugar of Lead being a ſalt made of Lead, with diſtilled vinegar, is intenſely cooling, and prevents any immoderate flux falling upon the Eye, which ought to be chiefly regarded in all ſuch caſes.

The ſymptoms of Blows, &c. in their different degrees.

Sometimes, when the Blow hits directly the middle and moſt prominent part of the Eye, the Eye-ball turns white, and this whiteneſs is of different degrees, according as the injury received happens to be more or leſs violent. Sometimes the pupil or ſight, the *Cornea*, and all that is uſually clear and pellucid, becomes the exact colour of a pearl; and where the Stroke has been more violent, the Eye will appear more white and opaque, reſembling the white of an egg when boiled. In the firſt caſe, when the whiteneſs is only of a pearl colour, the Horſe has uſually ſome glimmering of light; in the latter he is quite blind, while his Eye continues in that ſtate. This whiteneſs proceeds from a ſtagnation of the juices of the *Cornea* or horney coat of the Eye, which juices, in their natural ſtate, are clear like water, and may poſſibly turn white when they happen to be heated and inflamed, as the Blood in the fleſhy parts, from a Blow or Contuſion, firſt appears with a ſettled redneſs, and then turns black. I have frequently ſeen the Eye all over white with a Blow, without ſo much as a weeping, or the leaſt appearance of weakneſs, the Horſe never offering to ſhut the blemiſhed Eye more than the other; and in this caſe the Eye has been cured in a few days, only with bleeding and the uſe of the above inſerted Eye-Water.

But when a Blow happens to be given with great force, the Eye will not only turn white, but the *Tunica adnata*, its uppermoſt coat, which anſwers to the white of the human Eye, will be alſo viſibly inflamed; though in a Horſe it is very much ſtreaked with brown, that coat being full of little ſmall twigs of Arteries and Veins, which upon any hurt or weakneſs become turgid, and are the cauſe of redneſs, heat, and pain. I have ſeen a Horſe's Eye, by a violent Blow, or from the bite of another Horſe, look like a white ſtone ſet in a cornelian. In this caſe the Eye is generally ſhut up till the inflammation is abated, and the inflamed part grows yellow, as almoſt all inflammations do in their going off, and then we often ſee a white Bliſter on the *Cornea*, ſometimes the bigneſs of a grape, and this always proves a great relief, and when it breaks ſoon, accelerates the cure. But when it happens to be ſeated deep in the *Cornea*, with a mixture of redneſs, it is apt to leave a little ſcar, ſometimes the ſize of a barley corn, ſometimes no bigger than a lentil, and often, with good management, ſo ſmall and thin, that it is ſcarce to be perceived, unleſs a perſon come quite cloſe to the Eye. I have had many of theſe accidents under my care, and never knew any of them do amiſs where the Eyes were naturally good, and that the Horſe had not been firſt tampered with before I was ſent for. I have been concerned with ſome where the Eye has been ſo much ſwoln and raiſed out of its ſocket, that the Eye-Lids could not be cloſed till it was reduced by the help of proper applications;

cations; and yet the cure has been compleated in a ſhort time, without the leaſt blemiſh or defect.

The Cure of Blows and Contuſions, &c.

The right way to manage all theſe diſorders, is by treating them with milder or more powerful applications, according as the ſymptoms are more or leſs aggravated. If the Horſe be loaded with fleſh, or of a groſs conſtitution, evacuations by bleeding and an opening diet will be the more neceſſary, and in ſome caſes rowelling. If the Eye be only turned white, and continues dry, without moiſture, and the Horſe keeps it open, nothing further will be required after bleeding, but to be bathed with ſome cooling Eye-water, ſuch as has been directed, with a ſoft diet of ſcalded bran for a few days, avoiding any thing that is hard to chew, as oats and beans. But if a defluxion attends, and the under ſide of the Eye be inflamed, the Eye-Lids ſwelled and moiſt, and if the Horſe by reaſon of the anguiſh keeps it ſhut, it will be proper in this caſe to uſe a digeſtive in the following manner.

Take of the Tincture of Roſes, as above directed, four ounces; while it is warm, diſſolve in it an ounce of Honey, and thirty grains of Sugar of Lead; ſhake the vial and bathe the Horſe's Eye all over. Or it may be made thus, *viz.* Roſe Water, three ounces; Honey of Roſes, one ounce; Sugar of Lead, thirty grains.

If the Eye be moiſt and watery, a ſpoonful or two of red wine may be added, which will help to recover the tone of the Eye, thicken the matter that runs from it, and ſoon dry it up; and when once the Eye is dry and has gathered ſtrength, that the Horſe opens it freely of his own accord, if a bliſter or any blemiſh then remains on the *Cornea*, or any kind of ſoreneſs, it will be proper to ſharpen this medicine, by diſſolving a dram of white Vitriol in a little water, about a ſpoonful or two, and adding it to the whole quantity of the above-mentioned Eye-Water, or elſe to blow a little Vitriol and Sugar Candy into the Eye thus, *viz.*

Take white Vitriol, one dram; white Sugar Candy, half an ounce; grind them very fine in a marble or glaſs mortar, and blow a little of it into the Horſe's Eye once a day, through a clean tobacco-pipe, or put a little into a corner between the Eye-Lids, with your finger and thumb.

If this does not take ſufficient effect, make the powder with white vitriol and the fineſt loaf ſugar, of each equal parts, and uſe it as the other, once a day, and the laſt mentioned Eye-water twice a day, *viz.* night and morning. But if the Eye begins to clear, and looks of a ſky-colour, it will be ſufficient to uſe the Eye-water alone, once a day, until it is quite tranſparent and clear.

But if after the Eye is grown ſtrong, freed from all heat and inflammation, and can bear the light, there ſtill remains a kind of ſcurf or ſcab over the Pupil, or any part of the *Cornea* near it, raiſed in the middle dark yellow or browniſh, and with whitiſh rays towards its edges; where this happens, the *Cornea* for the moſt part has been wounded, and is common when a Horſe had his Eye bit by another Horſe; and tho' this little tumor may not diſappear ſo ſoon as we could wiſh, yet where the Eye is naturally good, it will often wear off by degrees, and leaves no blemiſh, unleſs it be ſeated deep in the *Cornea*; and when any blemiſh remains, it is for the moſt part owing to ſome miſmanagement, eſpecially by uſing applications that are too harſh for ſo tender a part, before the pain and anguiſh is removed; for the Eye is ſo delicate, that when the hurt is newly received, it is ſcarce able to indure the common Eye-waters, made with a ſolution of *Tutty*, the *Lapis Mirabilis*, or *Lapis Medicamentioſus*, or any other that have earthy or metallick ſubſtances in their compoſition, much leſs powder of flints, egg-ſhells, or ſcuttle-bone, which ſome perſons unwarily uſe. For I have obſerved upon the fulleſt trials made of theſe things, that nothing agrees ſo well with the Eyes of Horſes as tinctures made of proper vegetables, or ſalts that will diſſolve in water. Theſe ſeem to be the moſt familiar and ſuitable to the Eyes, that are naturally humid and moiſt. I have uſed ſolutions of all the vitriols and other ſalts, and often with good ſucceſs, but never with any hurt or injury to the Eye, when they are finely ſettled and cleared from their droſſy parts, and properly applied.

Wounds of the EYES.

WOUNDS of the Eyes are often dangerous and ſometimes mortal, when they penetrate through the bottom of the orbit, where the branches of the optic Nerves paſs from the Cerebellum; but if the Wound be not deep, though it paſs through ſome of the coats and humours, it may be cured with proper care; and I have known theſe cures made in a much ſhorter time than one would eaſily imagine. But if a Wound penetrate thro' the *Retina*, which is compoſed of the optic Nerve, and many ſmall twigs of Veins and Arteries, it will readily intail blindneſs, and perhaps convulſions and other diſorders. The ſame may alſo happen when any part of the Bones that compoſe the Orbit or ſocket, in which the Eye is placed, are depreſſed or broken into ſplinters, and ſtuck into the tender Membranes, and other ſenſible parts.

The Eyes may be wounded in the ſame manner as the other parts of the Body, *viz.* by inciſion or puncture, and we find theſe alſo complicated with contuſion and fracture of the Bones of the Orbit, and often with laceration or tearing of the Eye-lids, and the circumambient parts of the Eye-brows and Temples, which frequently happens from violent bites, and other accidents, and the method of cure, as to generals, is very near the ſame as in all other Wounds. But in regard of the extreme tenderneſs of the Eye, ſome particular cautions are neceſſary to be obſerved, as bleeding, even tho' the Wound be but ſmall, becauſe the leaſt irritation will eaſily bring a defluxion into the Eye, which ought by all poſſible means to be removed. The poſition of a Horſe's Head, and the contortion of his Neck, contributes alſo to render the cure more difficult; and therefore all the methods of revulſion are proper, as rowelling under the Jaws, the Breaſt or Belly, eſpecially when the Eye is much ſwolen and inflamed, as has been already recommended, in the caſe of blows and contuſions: As for rowels in the Neck, I cannot ſay I ever ſaw them do much ſervice to Horſes, however uſeful ſetons and other iſſues on the Neck and Shoulders may be to Men in the like caſes. As they are apt to be painful in the Neck in the manner Farriers put them in, they make a Horſe reſtleſs and uneaſy, and often prove a great injury to the Eyes, which require all the calmneſs and ſteadineſs imaginable, until ſuch time as the heat, pain, and inflammation is gone off or very mnch abated.

The Cure of Wounds in the Eyes.

Neceſſary cautions to be obſerved.

Another caution is neceſſary in curing Wounds of the Eyes, that no harſh application be made, while the pain and inflammation remains, and even not when theſe ſymptoms are gone off, if milder methods will do the buſineſs. Care muſt alſo be taken to keep the Horſe low in his diet, eſpecially while he is unfit for any other exerciſe, beſides walking in the ſhade; and his diet ſhould alſo be opening, as above directed; and if it be the graſs ſeaſon, cut graſs or any kind of green herbage cannot be improper.

All imaginable methods ought to be taken to keep the wounded Eye cool, by cooling applications, avoiding the uſe of the oil of turpentine, which our Farriers are buſy with upon all occaſions. If the Eye-lid is wounded and cut through, and the cut divides it ſo as the Lips part one from the other, it ought to have a ſtitch with a ſtreight needle, ſuch as the ſurgeons uſe for ſuperficial Wounds, and not to be drawn too cloſe, but juſt ſo far as to bring the edges together; and this is yet the more neceſſary when the Eye-ball happens to be wounded through the Eye-lid, that there may be room for the diſcharge of the matter. I have obſerved that the Eye-lid requires but one ſtitch, for when there are more, and theſe purſed together, as the Farriers generally do, and the Lips drawn cloſe, ſuch ſtitches will break in twenty-four hours, and leave the Wound in a worſe condition that it was at firſt.

The Eye-lids, how to be ſtitched when cut.

The proper dreſſing for Wounds of the Eye, is honey of roſes and tincture of myrrh, *viz.* one dram of the tincture to an ounce of the other. The beſt way of uſing it is to dip a pledgit of lint in this mixture, made warm, and applied to the Wound, for tow and hurds are too harſh for the Eye. This dreſſing may be repeated once a day, until the Wound is healed up and cicatriſed, and it will ſeldom fail of ſucceſs, if no uncommon ſymptom appears, as ſwelling, pain, and inflammation, or a fracture of the bones that compoſe the orbit or ſocket of the Eye. In all which caſes, the following fomentation will be of great ſervice.

Take Elder-flowers and red Roſes, of each a handful; Marſh-Mallows, half a handful; Sal-prunelle, half an ounce; Sugar of Lead, one dram. Infuſe in a quart of boiling-water, and ſtrain the infuſion through a linen-cloth, and when it has ſtood to be cold add half a pint of red wine.

This fomentation may be uſed in the following manner: Take two thick woollen-cloths, or two pieces of ſwanſkin, the breadth of two hands each, ſoak them in the liquor, made pretty hot, but not ſcalding, for the Eye will ſeldom bear any thing that is intenſely hot, as other parts of the body. Wring out one of the cloths, and apply it over the wounded Eye, and when the firſt begins to cool, wring out the other, and apply them thus alternately, for the ſpace of half an hour; and if the fomentation grows cold in that time, let it be heated again over the fire. The Horſe may have his Eye fomented in this manner twice a day, or oftner; and the quantity preſcribed will laſt forty-eight hours with good management.

When the ſhooting pain abates, which in ſome meaſure may be judged of by the ſinking of the ſwelling, the digeſtion of the Wound, its diſcharging good matter, and the chearfulneſs of the Horſe's looks, the uſe of the hot ſtuffs may be laid aſide, and only the dreſſing continued, as above directed, till the Wound is healed.

If any part of the Orbit Bones be broke, and feel looſe, the cure will be retarded till

The Cure when the Orbit Bones are broke.

broken parts are ſeparated and caſt off, during which time, it will be proper to dreſs with tincture of myrrh, or tincture of myrrh and the tincture of euphorbium mixed together; for nothing agrees with the Bones but cleanſing tinctures and other ſpirituous applications.

I have known ſome inſtances, where the Bones round the Eye were broke; and in one particularly, part of the Orbit that forms the Eye-brow was ſo depreſſed, and drove down ſo hard upon the Ball of the Eye, that no means the Farriers could uſe were able to raiſe it, ſo as to give him any eaſe, which ſoon cauſed ſuch violent Convulſions as brought him to his end. Another accident of the ſame kind happened many years ago, to a Troop-Horſe that fell down in a hard party, and hit his Eye-brow againſt a large pebble that lay on the road, whereby a piece of the upper part of the Orbit was fractured, and depreſſed into the great hollow above the Eye. A country Farrier had induſtriouſly ſtitched the wound with ſeveral ſtitches, overcaſt, and filled it with doſſils of tow, which put the Horſe in ſuch violent pain, that he forſook all manner of food until the ſtitches were cut and the doſſils taken out. After this I cauſed him to be dreſſed with a digeſtive of common turpentine, made very thin with the yolks of eggs and tincture of myrrh, till the fractured Bones looſened, and grew bare in ſome places, after which I ordered pledgets dipped in tincture of euphorbium to be laid next the Bone, and the other common dreſſing over it; I alſo cauſed the Horſe to be bled, which had been omitted by the Farrier who firſt dreſſed his wound, for his Eye was very much inflamed and ſwoln, and when the Wound began to digeſt, there run a thick matter in very great plenty from the Eye as well as from the Wound. The Eye was only dreſſed with tincture of roſes and ſugar of lead, which agreed perfectly well with it. This and the great diſcharge from the wound ſoon gave relief, that the ſwelling ſubſided, and the Horſe opened his Eye, which was no ways blemiſhed nor his ſight impaired.

In the proceſs of the cure two pieces of the Bone of the upper part of the Orbit, that forms the Eye-brow that had been depreſſed into the hollow above the Eye, ſeparated and came quite off; one was about an inch and a quarter long, and an inch the broadeſt part, and about a quarter of an inch thick. The other was ſmaller, and both jagged and ſpungy on their under ſide, with little holes and ſinuoſities for containing the medullary ſubſtance; but after the cure, the blemiſh was ſo ſmall as ſcarce to be obſerved, but by thoſe who knew the accident. And indeed this good ſucceſs was in a great meaſure owing to gentle uſage, in forbearing to make inciſions, and not endeavouring to force the fractured pieces out before nature had formed a new ſubſtance to ſupply the defects, which I found by my finger to be very ſmooth and even. The cure was compleated in two months, and the Horſe continued in the troop afterwards many years, and did all manner of duty till he was very old.

Punctured Wounds in the Eye, how to be managed.

Sometimes alſo Horſes meet with punctured Wounds in their Eyes, *viz.* when ſome ſharp-pointed thing has run into the Eye-ball. Theſe Wounds come chiefly by thorns, in paſſing through thickets or hedges, or by forks in the hands of barbarous or careleſs perſons, eſpecially when the forks are new, before their points are worn ſmooth and blunt, of which kind I have ſeen ſeveral, where the *Cornea* has been pierced, and the watery humor run out; but when the inſtrument paſſes no farther, the damage often proves ſmall. The Eye ſinks at firſt, and looks ſtrangely, but uſually recovers again in a few days, eſpecially when care is taken to apply nothing to the wounded Eye, that may cauſe inflammation. I never found any thing better to uſe in this caſe, than tincture of roſes with honey, or honey of roſes, either alone or with ſugar of lead. The juice of eyebright, or the juice of celandine, are alſo of uſe to help to wear out the ſcars which punctured wounds are apt to leave on the *Cornea.* But when the Criſtaline humour is wounded, or if the puncture be large and the wound ragged, and has torn or broken any part of the *Iris* or *Ligamentum Ciliare*, or touched the *Retina*; the Horſe may, in ſuch circumſtances, not only have his Eye much blemiſhed, but the iſſue may be incurable blindneſs.

I had once a Troop-Horſe under my care, whoſe caſe, in a great meaſure, illuſtrates what has been here taken notice of, concerning punctures in the Eyes of Horſes: This Horſe had the point of a fork puſhed into his Eye, as he was running eagerly up to his rack, while his feeder was putting down his hay with a fork, which happened to be new and very ſharp at the points. There was a ſmall hole made by this puncture on the under ſide of the Pupil through the *Cornea*; ſo that the watery humour burſt forth and run down his Cheek, accompanied with ſome few drops of Blood, by which his Eye became quite flat and ſunk within its Orbit. He was preſently bled, and afterwards was dreſſed only with tincture of roſes and honey, put warm into his Eye, twice a day, by which he was cured in leſs than a fortnight, without any other blemiſh than a little crooked line, about a quarter of an inch long, and ſo faint, that it could hardly be diſcerned without coming cloſe to the Eye. The wounded Eye was as full as the other, neither could we perceive his ſight to be any ways defective.

About two years after this, the ſame Horſe had the misfortune to meet with the like accident in the ſame Eye, by a fork, as was imagined, run into it, the ſecond time, through the rack ſtaves, by which it was irrecoverably loſt. The hole was ſo large, that I could eaſily put the end of my little finger into it. At firſt his Eye was, for the moſt part ſhut, and had a continual running for ſeveral days of bloody water, during which time pledgets were ſpread with conſerve of roſes, and applied to the Eye, and over that dreſſing a cold charge made of bole vinegar and whites of eggs, with a mixture of wine lees. This was laid over one ſide of the Forehead, and along the Temple and Cheek, and towards his Noſe on the ſame ſide, to hinder, as much as poſſible, a greater fluxion upon the Eye. When the Wound began to digeſt, it run like a rowel, but in ſo great a quantity, that notwithſtanding all endeavours were uſed to abate that ſymptom, with proper evacuations, yet the diſcharge never ceaſed till almoſt the whole ſubſtance of the Eye was intirely diſſolved, and turned to matter, by which means the Eye periſhed, and was ſo waſted as to cauſe a very great deformity, which could by no means be avoided; though in all other reſpects, the Horſe continued perfectly well and fit for his duty.

LUNATICK or MOON-EYES, and alſo of CATARACTS.

I HAVE, in conformity to cuſtom, made uſe of the common appellation of Lunatick or Moon-Eyes, though the ſymptoms here deſcribed, are no other than the fore-runners of Cataracts, and generally end in blindneſs. Signior *Ruini*, and moſt other foreign writers, both *French* and *Italians*, in treating the diſeaſes of Horſes, have all of them reckoned the Moon-blind ſymptoms, as a peculiar diſeaſe of the Eyes, without having any relation to a Cataract, which they have conſidered apart, as another diſeaſe of the Eyes, which ſhews they built more on books than experience. But from many years obſervation, I do not remember I have ever ſeen a Cataract bred in the Eyes of any other Horſes, but thoſe that have been called Lunatick or Moon-blind. The *Arabians* were the firſt that aſcribed ſo much to the Moon in the diſeaſes of the human body; and after the decay of learning all over *Europe*, their ſuperſtitious notions were ſo firmly rivetted, and ſo univerſally prevailed, that they could not be eaſily exploded, even by the ableſt phyſicians, till the modern diſcoveries in natural knowledge made way for more ſolid improvements in the medicinal art; and therefore it is no wonder, that the firſt writers on the ſubject of Farriery (notwithſtanding ſome of them were men of learning) ſhould fall in with all the common ſuperſtitions that had ſo long prevailed, and had ſo great an influence on the practice of phyſick.

How this diſtemper is deſcribed by writers.

Theſe writers have deſcribed this diſtemper, as appearing at certain times of the moon, coming ſometimes at the new moon; ſometimes at the full, at other times in the wane of the moon; that it ſometimes returns once in three months, and ſometimes once in two months, and in ſome not above once in ſix months; that the Eyes look ſo clear when the diſtemper abates, that it is impoſſible to ſee any imperfection in them. But theſe obſervations are very liable to exception, for any one that has the leaſt knowlege of the Eyes, muſt needs ſee, that when the diſtemper is the moſt abated, and the Eye the moſt clear, it ſtill ſhews a remarkable weakneſs, and upon full trial, the ſight will be found defective. Neither could I perceive that the Eyes were affected by any of the moon's periods, ſo as not to vary, unleſs by meer accident. And therefore, theſe obſervations are neither of great uſe to the knowlege of the diſtemper, nor to lead us into a right method of curing it when it happens.

It is generally the forerunner of Cataracts.

I have already taken notice, that the ſymptoms, which appear in the Moon-eyed Horſes, are, for the moſt part no other than the prognoſticks of breeding Cataracts. Theſe ſymptoms generally make their firſt appearance, when a Horſe is turned five, coming ſix, at which time one Eye becomes clouded, and the Eye-lids ſwoln, and very often ſhut up; and for the moſt part a thin viſcid water runs from the diſeaſed Eye down the Cheek, which is generally more or leſs in proportion, as the Eye and Eye-lids happen to be more or leſs ſwelled and inflamed; and in ſome conſtitutions, the inflammation is ſo great, and the humour ſo ſharp and corroſive, that it ſcalds and fetches off the Hair, wherever it comes. The Veins of the Temples, and under the Eye, along the ſide of the Noſe, are alſo turgid and full; others run but little, and the humour not very ſharp.

This diſorder is apt to come and go, till the Cataracts are perfect and ripe, and then all pain and anguiſh, and the ſoreneſs and running of the Eyes go off with blindneſs, when the Horſe is between ſeven and eight years old, this being about the time when moſt Horſes are ſpread and come to their full growth; ſo that from its firſt appearance to its completion, is generally about two years, or two years and a half, during which time, ſome Horſes have the returns of the diſorder, not only more frequent than others, but the ſymptoms more ſtrong and violent. In ſome the Eye is not much diſturbed above a week, when it clears up again, and returns to its former ſtate. In ſome Horſes, the Eye continues bad a fortnight, or three weeks. In others a month or longer, before the diſorder goes off; and the time of the return, ſo far as I could obſerve in many Horſes was always uncertain, and could not be fixed to any period of the moon, as many have imagined, being ſometimes ſooner, ſometimes later, according to its predominancy, or according to the treatment a Horſe meets with from his Farrier and keeper. Some have their returns once within the ſpace of two or three months; ſome within the ſpace of four, and with the greateſt care and pains, the diſorder ſeldom keeps off above five months without a relapſe.

This is uſually the caſe of thoſe moon-blind Horſes, that have their Eyes ſtrongly infeſted with a hot ſharp humour, that ſhuts them up with ſwelling and inflammation. But there is another kind of moon-blindneſs, which is alſo the forerunner of Cataracts, where no humour or weeping attends the Eye. It is never ſhut up or cloſed, as in the caſe above deſcribed, but will now and then look thick and troubled, at which times the Horſe ſees little, and perhaps nothing diſtinctly. Here the Eyes always appear ſunk and periſhing, though the Cataracts do not come ſo ſoon complete, as in thoſe that are full, and where a humour is predominant; nor is it unuſual in this caſe for one Eye to eſcape, whereby a Horſe will retain ſight to guide him, ſo as to render him fit for common drudgery. I have likewiſe known Horſes breed Cataracts, ſometimes in one Eye, ſometimes in both, where the ſymptoms have been ſo favourable, as neither to be taken notice of by their owners, nor by others, till the Cataracts have been viſible. But upon enquiry, I always found theſe Horſes had been addicted to ſtartle and much more ſometimes than others; and upon examining the Eyes, obſerved them to be ſunk and in ſome meaſure periſhed.

Some thoughts concerning the cauſe of this diſtemper.

The cauſes of this diſtemper are various, and when it proceeds from a natural defect in the Eyes, it may, no doubt, be hereditary; but in a Horſe that has naturally good Eyes, and yet turns moon-blind, it is uſually owing to ſickneſs, or ſome other malady, that has terminated in the Eyes, which ſometimes happens; but we ſeldom ſee Horſes turn moon-blind and breed Cataracts, but where the Eyes are naturally in fault. Theſe Eyes are for the moſt part faulty, that are very large and prominent, or very flat, ſmall and ſunk; both which defects in the Eyes of Horſes are liable to blindneſs, though they differ in their manner; and therefore Colts, that have large Eyes, that run abroad, and always feed with their Heads downwards, continually expoſed to the ſun in hot weather, may eaſily contract an habitual weakneſs in their Eyes, eſpecially as the blood and juices of all young animals are naturally of a viſcid and balſamick contexture, and ſo may be the more eaſily retarded in the veſſels of the Eyes, which are exquiſitely fine. Theſe things produce weakneſs, and relaxation in the Eyes, and this ſtill encreaſes ſo long as the Blood is in that ſtate, which we may reaſonably ſuppoſe to continue till a Horſe has done ſpreading, and turned ſeven, for then the Cataracts generally grow complete. On the other hand, when the Eyes are flat, and lye deep within their Orbits, the ſurface of the Eye being alſo fattiſh, the rays of light falling directly upon the pupil, and theſe not being ſufficiently refracted, as on thoſe Eyes that are more convex, or in other words on Eyes of a rounder make, muſt needs weaken the Eye, affect the optick Nerve, and conſequently weaken the tone of the Muſcles; and with the Cataracts alſo induce the ſymptoms of a *Gutta Serena*; and this may be the reaſon why the Eyes periſh and decay while the Cataracts are growing.

Sickneſs in Horſes ſometimes the cauſe of blindneſs.

Other cauſes of Cataracts and Moon-blindneſs, are Fevers, ſome of which remarkably affect the Eyes, eſpecially thoſe of the bilious kind, when the Eyes ſwell and turn yellow, and that ſymptom not carefully attended to in the cure. Sometimes inveterate colds, with a Catarrh, will alſo affect the Eyes, and ſhut them up for ſeveral days, and thereby induce weakneſs, which frequently ends in Cataracts. The Strangles, when imperfect, when they are opened and the matter let out before they come to maturity, or when the humour is repelled by improper applications, or other ill uſage, will alſo cauſe a weakneſs in the Eyes, and produce the ſame effect. Sometimes alſo the Eyes of Colts and young Horſes are affected, and turn moon-blind in breeding their Teeth. Horſes that peel about their Heads ſpring and fall, if the humour chances to be ſuddenly repelled, it is apt to fall upon their Eyes, and turn them moon-blind. But in all caſes of moon-blindneſs, it is not improbable there may be ſuch a conformation of the Eyes of ſome Horſes, as may render the ſame accidents dangerous to them that would not be ſo to others.

The ſigns. The ſigns of this diſtemper may, in ſome meaſure, be deduced from what has been already taken notice of in its deſcription, *viz.* ſwelling and inflammation of the Eyes alternately, ſometimes one Eye, ſometimes the other, with a running of a thin watery ſerum, which is often ſo hot and ſcalding, as to fret off the Hair. In others the Eyes run but little, and ſome not all, but look deadiſh, ſunk, and periſhing. In all moon-blind Horſes, the Eyes are ſometimes tolerably clear, at other times thick and muddy, of a wheyiſh colour, or a duſky yellow; and when this happens, a moon-blind Horſe ſees very little, and when he is brought out into the light, he takes little notice of any perſon or object that is near him, but always looks upwards, with his Head raiſed, lifts his feet high, and ſets them down with fear. Tho' in this diſtemper the humour ſhifts from one Eye to another by turns, and at ſome intervals ſeems to go off, yet when their Eyes are at their beſt, they look weak and with a deadneſs, and when any ſuch Horſe has his Head held up, the weakneſs of the Muſcles and the whole Eye is eaſily perceived.

Prognoſticks.

When this diſtemper happens to Horſes that have large full Eyes, reſembling thoſe of a calf, and when the humour continues by long periods, and the returns frequent, there is great danger of blindneſs. If the Eyes be of a moderate ſize, well formed, and the periods or returns of the diſtemper ſhort; if the Horſe ſees perfectly when the humour goes off, and the Eyes in thoſe intervals look clear, the Horſe may recover. When the humour attacks one Eye, without changing to the other, there is alſo hopes of a cure, at leaſt, of ſaving one Eye; but when the Eyes looks flat and depreſſed, and decay gradually, it is generally the forerunner of blindneſs; for in this caſe the Nerves and Muſcles of the Eyes are affected, and the Cataracts always grow in the progreſs of the diſtemper, which ſeems to be complicated with a *Gutta Serena*: And here alſo, as in the preceding caſe, when the diſtemper ſeizes only one Eye, the other ſometimes may be ſaved, and when this happens the remaining Eye generally grows ſtronger when its fellow is gone. But when the diſtemper proceeds from a violent cold, as ſometimes happens, whereby we often ſee the Eyes ſwoln and quite ſhut up, though the Horſe may be threatned with blindneſs by ſeveral returns, yet by good management it may ſometimes be prevented, and the Eyes recover, and likewiſe when the Eyes are darkened with a yellow cloud, the diſtemper does not always prove incurable, provided the Eye is not naturally bad, and this ſymptom of long continuance. In all caſes of moon-blindneſs, the moſt promiſing ſigns of a recovery are when the attacks come more ſeldom, and their continuance grows ſhorter: When the inflammation and ſwelling in thoſe Eyes that are naturally full and large, abates. On the other hand, when the Eyes, that look ſunk and periſhing grow more plump and full; and when in either, the *Cornea* looks clear and tranſparent, without muddineſs, and the Horſe looks more attentive to his way, and goes on without much fear or ſtartling; all theſe are promiſing ſigns, and with good and careful management he may recover.

The Cure. I ſhall now proceed to the moſt difficult part, *viz.* the cure, for few moon-blind Horſes eſcape; and when it is hereditary, when the Eyes are naturally defective, I ſhould never adviſe any one to be at much expence and trouble to ſave them, for fear he ſhould meet with a diſappointment. Yet we ſometimes ſee moon-blind Horſes, or at leaſt that have many of the ſame ſymptoms, recover and do well, even beyond expectation.

If the Eyes are large, full, ſwoln, and inflamed, the Horſe ſhould be bled at proper intervals, ſometimes in the Neck, and ſometimes backward, to make revulſion. But where the Eyes appear ſunk and periſhing, bleeding is often pernicious. After bleeding, for thoſe that are full and run a thin ſharp water, make a ſtrong tincture of Roſes, as has been directed above, *viz.* Take four ounces of this tincture, diſſolve in it half a dram of Sugar of Lead, and waſh the Horſe's Eyes, and all over his Eye-lids, with a piece of ſpunge or a clean rag, twice a day. If the matter digeſt and thicken, which uſually happens before it abates, add to the whole quantity of this tincture, about two drams of Honey, which will diſſolve by holding the phial near the fire, and ſhaking it, and uſe it as before. At the ſame time if the parts near the Eye be hot, and the Veins over the Face and along the ſide of his Noſe, be turgid and full, bathe thoſe parts frequently with the beſt Vinegar, Verjuice, or Vinegar of Roſes, till the heat and running of the Eye abates, and the Veins ſink and grow leſs apparent, and alſo till the Eye begins to look clear; in the mean time ſome few lenient mild purges may be adminiſtered, as the following.

Proper ſcourings for moon-blind Horſes.

Take Lenitive Electuary and Cream of Tartar, of each four ounces; Syrup of the Juice of Buckthorn Berries, two ounces; mix theſe with white Wine and Water, warm'd, about a pint, and give it faſting: Or this,

Take Lenitive Electuary and Cream of Tartar, of each four ounces, as in the preceding; *Glauber*'s purging Salts, three ounces; the ſolutive Syrup of Roſes, two ounces; to be mixed with white Wine and Water, or with warm Water Gruel.

Either of theſe may be given to moon-blind Horſes. The latter is rather the more mild and cooling, and exceeding proper, if the Horſe be fat and full of Blood, and will work ſo gently, that it may be repeated twice a weak till the Eye becomes clear and attains its uſual brightneſs.

The Horſe ſhould have ſome feeds of ſcalded bran while theſe lenitives are given him, and he may have moderate exerciſe, or may be made uſe of in any kind of eaſy buſineſs; for theſe draughts, for the moſt part, work off in about two hours. But as the Blood in all theſe caſes is generally ſizy, and as this diſpoſes young Horſes to frequent returns of the diſtemper, it is therefore neceſſary to adminiſter ſuch things as may attenuate the juices and preſerve them in a more fluid ſtate. Theſe are called alteratives, becauſe their property is gradually to alter the ſtate of the Blood. The following I have often made uſe of, in this and many other caſes, with very great ſucceſs.

A mild purge where the Eyes are weak.

Take the fineſt ſuccotrine Aloes, half an ounce; or ſix drams; Cream of Tartar, half an ounce; freſh Jallap, in fine powder, and Salt of Tartar, of each one dram; make into a Ball, with a ſufficient quantity of Oil of Amber, and roll it in Liquorice Powder.

One of theſe may be given every week, in the manner of a common purge, with ſcalded bran, and his water milk warm. The firſt day it will work plentifully by urine, and the day following both ways; but no more than juſt to empty his Guts, unleſs when there is a foulneſs by reaſon of a redundant ſlime and greaſe. In which caſe I have often known one of theſe weak purges work powerfully two or three days, without the leaſt diminution of the Horſe's ſtrength, or loſs of fleſh. Theſe alterative purges ſhould be continued for a month or ſix weeks, and after omitting another month to begin again, in all which time the Horſe may be kept in any common buſineſs, except hunting, journey-riding, or other very laborious exerciſe.

In the intervals between the purges, I ſhould chuſe to give him an ounce of crude Antimony every day, made into a fine impalpable powder, in one of his feeds, which may be continued for three months or longer. But if the Horſe be of value, inſtead of crude Antimony, he may have powders compounded with native Cinabar, or Cinabar of Antimony and Gum Guiacum, equal parts, giving him an ounce every day, till he has taken two or three pounds, and after an interval of about three months, to proceed in the ſame method till the Eyes look ſtrong and clear, and that the Horſe ſhews no ſigns of blindneſs, or any defect in his ſight or weakneſs in his Eyes. Several gentlemen have by my advice followed this method with good ſucceſs, where the Eyes have been full and no ways periſhed. A pound of Guiacum Wood, boiled in three gallons of water, to two, is a cheap remedy, and may be profitably adminiſtered to Horſes of ſmall value. It promotes perſpiration, dries ſuperfluous humidity, and ſtrength-

Alterative powders for the Eyes.

Decoctions for the ſame purpoſe.

ſtrengthens the ſolids when relaxed, ſweetens the Blood, and may be given a quart or two every day, in a Horſe's water, and will have a good effect to prevent moon-blindneſs where it is not hereditary, proceeding from a natural defect in the Eye.

The Cure, when the Eyes are ſunk and periſhing.

But when the Eyes are ſunk and periſhing, and the Eye-brows are pinched at their inner corners next the noſe; when there is little or no inflammation or running, except a more than ordinary moiſture in the *Caruncle*, or Haw of the Eye, or where there is no moiſture at all, as we often find in many moon-blind Horſes: wherever theſe ſymptoms are, a method of cure is required different from the preceding. For as we ſuppoſe here the Nerves of the Eyes to be affected, and the ſupplies of the arterial Blood by that means denied; therefore wherever the fault may be, whether originally in the Blood or in the Nerves, it is neceſſary, in either caſe, to adminiſter ſuch things as not only attenuate the Blood, but may cauſe a greater derivation thereof to the Eye: ſo that the moſt likely way to ſucceed is by the proper uſe of mercurials, and theſe ſuch as are the moſt efficacious, and at the ſame time the moſt ſafe. But firſt of all let the Horſe have the laſt mentioned purge given him by way of preparation, and when the operation is over, which will be mild and gentle, the following ball may ſucceed.

Take *Mercurius Dulcis* that has been often ſublimed and dulcify'd, two drams; make it into a ſmall ball, with a ſufficient quantity of Conſerve of red Roſes and Wheat Flour.

Let this ball be given early in the morning faſting, and tie up the Horſe from eating two or three hours after it, then let him have a feed of ſcalded bran, with warm water or warm gruel to drink, which regimen ought to be continued ſo long as he is under this courſe of mercurial and purging phyſick; cold water or other cold drinkables, being ſomewhat unſafe at ſuch a time. The mercurial ball may be repeated every other day, in the morning, till the Horſe has taken three or four. If his Mouth grows tender, which may poſſibly happen, if he be not of a pretty ſtrong conſtitution, he muſt be fed with water-gruel for two or three days, till that ſymptom wears off. At the ſame time the purge may be repeated once or twice, and the following eye-water applied outwardly to both his Eyes, if both be weak and diſordered.

Outward applications for moon eyes that are ſunk, &c.

Take Crude *Sal Armoniack*, cleaned from the black ſcurf that is uſual on the outſide of the cakes, two drams; diſſolve it in a pint of warm Water or Roſe Tincture; and add to it a gill of Spirit of Wine or the beſt Brandy, ſhaking them together in a ſmall quart bottle.

The Eyes may be bathed all over with this mixture, twice a day, or it may be uſed in the manner of a fomentation, by wringing cloths out of it, and applying them warm over the Eyes. This will act as a ſtimulus, and may alſo help to thin and rarify the gummy juices, and bring new ſupplies of nouriſhment to the periſhing Eyes. At firſt it may cauſe

a little

a little ſmarting, but after uſing it a day or two that ſymptom goes off, and if the Eyes grow more plump and full, there will be hopes of a recovery, at leaſt of ſaving one eye; and therefore the beſt way upon this proſpect is to proceed in the ſame method, after a month's interval, and ſo on, as you find encouragement; and in all theſe intervals I ſhould recommend the uſe of the above preſcribed powders in the Horſe's feeds, or the decoction of Guiacum in his water, or the decoction may in this caſe be made in the following manner.

Take a pound of Guiacum ſhavings, that are fulleſt of the Gum, which are generally of an olive green colour; boil them in three gallons of clear forge Water to two, and give a quart every day in the Horſe's water.

If a cloudy yellowneſs appears through the *Cornea*, which is uſual when the diſtemper proceeds from the Yellows, half a pound of Turmerick bruiſed, and four ounces of Rhaponticum, with the other things preſcribed for the cure of that diſtemper, may be added. And where the forge water cannot be procured clean, the ſame thing may be effected by quenching hot heaters in the water till it is of a blackiſh colour. Or a pound of old ruſty iron may be boiled in the decoction. The iron will warm and invigorate the Blood, render it more thin and fluid, ſo as it may circulate with more facility and eaſe thro' the ſmall capillary arteries of the Eyes. Or a pound of crude Antimony may be tied in a bag and boiled in the decoction; either the Iron or Antimony may be of ſervice, where the Eyes are ſunk and periſhing; the firſt from its invigorating warmth, and the latter from its healing ſulphurs, in caſes where the Horſe abounds with ſharp humours that ſhew themſelves in breakings out about the Head and Neck, which is not unuſual in this kind of moon-blindneſs.

As to the other helps made uſe of in the cure of this diſtemper, we find nothing ſo common as rowelling; and I have often, myſelf, complied with this method, which however I think is of little uſe, but where the Eyes are ſwoln and inflamed. In this caſe I have ſometimes ordered a ſucceſſion of rowels, at the critical returns of the diſtemper, *viz.* under the Jaws, in the Temples, in the Breaſt, and one on either ſide of the Navel, and at the deſire of the owners, and in compliance with cuſtom, I have cauſed rowels to be placed near the Tail, to make revulſion; but in theſe caſes, I have known a running at the Heels do more ſervice than them all, though in no reſpect to prevent blindneſs; for as ſoon as theſe drains are dried up, the ſymptoms generally return with greater force than before.

A great miſtake in taking up the Eye-Veins.

Some take up the Eye-Veins to prevent blindneſs, but without diſtinction, whether the Eyes are full with redundant humours, or ſunk and periſhing. In the latter caſe, the taking up the Veins may poſſibly be of ſervice, becauſe by that means the Eyes may be better ſupplied with its proper nutritive juices; but this too is uncertain, becauſe the fault may be in the Nerves, or the diſtemper may proceed from ſome original configuration of the Eye, which may be defective, and then ſuch operations are like to prove fruitleſs. But the taking up the Veins where the Eyes are full, muſt for the moſt part prove hurtful, by cutting off the channels which ſhould convey the blood and juices from thence in the courſe of circulation, and conſequently increaſe the diſtemper, inſtead of abating it. In this caſe, the taking up the Arteries might be of ſome ſervice; but I fear ſuch an operation would be too difficult for our farriers to undertake, and in the end might perhaps be uncertain.

The cutting out of the Haw.

The cutting out of the Haw is another operation uſually performed on moon-blind Horſes. The Haw is a ſwelling and ſpungineſs of the *Caruncle* or fleſhy ſubſtance in the inner corner of the Eye, next the Noſe, and when this is ſoaked with too much moiſture and humidity, it ſwells and turns ſpungy, ſomewhat reſembling the *Fiſtula Lachrymalis*, or elſe what is called the *Albugo* and *Pterigium*, in the human Eye. The Membrane to which it adheres, alſo grows thick, and ſpreads itſelf ſo as to cover a conſiderable part of the Eye, but ſeldom reaches ſo far as to cover any part of the Pupil. The ligament that runs along the verge of this Membrane becomes horny or like a *Cartilage*; and when it ariſes to this ſtate, it binds and compreſſes the Eye-ball like a hoop, and by its continual preſſure cauſes conſtant pain, and increaſes all thoſe bad ſymptoms that are the fore-runners of blindneſs.

Haws grow ſometimes in Eyes that are not naturally bad, after cold and ſurfeits; but moon-blind Horſes indeed are ſeldom without them; and wherever this ſymptom appears, that the Haws grows large and ſpungy, and derive a drain of humours upon the Eye, the operation becomes neceſſary, and is performed by taking hold of the Membrane with a ſmall hook, ſuch as the ſurgeons uſe in their diſſections, and cutting off ſo much of the *Caruncle* as looks moiſt and ſpungy, with part of the Membrane and Griſtle that make a preſſure on the Eye. When this operation is well performed, it does great ſervice, and often recovers Horſes that are not ſubject to Cataracts; and even in this caſe it makes the Eyes look ſomewhat better, and helps to protract the blindneſs, but will not prevent it when it is hereditary. This is an eaſy operation, and what almoſt every farrier pretends to, but the farriers are apt to cut off too much of this ſubſtance, and by that means weaken the Eye, and help on the blindneſs, inſtead of preventing it. The proper application, after cutting out the Haw, is Honey of Roſes, or rather Tincture of Roſes, with a little Honey diſſolved in it. But if the Eye continue ſtill to abound with moiſture, after the Haw is extirpated, and threatens freſh Fungus's, the caſe may be deemed bad; and then it will be neceſſary to blow into it a ſmall quantity of burnt Alum and fine Loaf Sugar, equal parts, once or twice a day, or one part of white Vitriol, and two parts of Sugar, and in ſome caſes it may be touched with the blue Vitriol Stone, or the Lunar cauſtick; but theſe violent ſymptoms ſeldom happen, and when they do we may ſuppoſe the Blood to have a very bad diſpoſition; ſo that it will hardly be worth while to attempt a cure, conſidering both the length of time and the uncertainty of ſucceſs.

The Cataracts in moon-blind Horſes deſcribed.

In diſſecting the Eyes of moon-blind Horſes, I have obſerved that their blindneſs generally proceeds from Cataracts, from a diſtemperature of the cryſtalline humour, though the other parts of the Eyes are alſo affected, both internally and externally. I have taken notice above, that the inſtammation and ſwelling of the Eyes in thoſe that are large and full, is attended with a rheum, which is ſometimes ſo hot that it ſcalds the Cheeks and frets off the hair; yet it may be obſerved, that it never abrades the *Cornea*, nor raiſes little tumours upon it, as the *Opthalmia* and other inflammations of the human Eye, which I imagine to be chiefly owing to the ſhort duration of this ſymptom on the Eyes of moon-blind Horſes. For in the human Eye the inflammation and weeping in an *Opthalmia* and blood-ſhot Eyes, is often attended with a ſcrophulous diſpoſition, and continues for a long time; but in moon-eyed Horſes being periodical, its continuance is but ſhort, and the running leaves their Eyes as the other ſymptoms abate; ſo that what damage happens to the *Cornea* in ſo ſhort a ſpace is generally repaired before another return of the diſorder; and in that caſe, where the Eyes are dry and periſhing, they are never expoſed to any ſuch accident. This I have mentioned, becauſe the *Cornea* in all moon-blind Horſes, both thoſe that are full-eyed and thoſe that are flat and ſunk, for the moſt part appears ſound and tranſparent, after the ſight is quite gone. In the latter, the watery humour appears almoſt totally exhauſted, but in the former, its quantity is rather increaſed, but much more viſcid, glary, and troubled, than in an Eye that is perfectly ſound. In all thoſe Eyes I have examined, the cryſtaline humour had loſt its ſolidity and tranſparency, and a white filamentous thready ſubſtance was derived from ſeveral parts of its ſurface, and hanging down like a fringe made up of fine white threads, filled a good part of the ſpace between it and the *Cornea*, ſo as to obſtruct the rays of light, and cauſe blindneſs. And when we view a Horſe's Eye that is gone blind with a Cataract, the Cataracts appear through the *Cornea*, like a large pearl in the *Pupilla* or ſight of the Eye. And in thoſe Cataracts that are variegated with brown, black or greeniſh ſpots, as ſome are, I have obſerved the *Ligamentum Ciliare*, the *Iris*, and ſometimes the *Uvea*, affected in the ſame manner as the cryſtaline humour, with little bruſhes or threads of brown, black, or green, mixed with or ſpreading over the Cataract of the chryſtaline humour. From all which it appears, that in moon-blindneſs, the cryſtaline humour is not the only part affected, but the other humours and coats of the Eye become alſo diſeaſed, and the Muſcles relaxed and weakned, which renders the cure always difficult, and for the moſt part impracticable.

GUTTA SERENA.

A *Gutta Serena* is that kind of blindneſs where the Eye looks clear and tranſparent, without any viſible blemiſh or defect.

This may proceed from any thing that obſtructs the Blood in the Arteries and other veſſels of the Eyes, cauſing a preſſure on the optick Nerves, which in a *Gutta Serena* are generally found to be periſhed and decayed.

A Gutta Serena deſcribed.

The cauſe is ſometimes from an ill ſtate of the Blood, when it happens to be extremely viſcid, or perhaps when it is poor and vapid, whereby the Nerves become affected, as in many lethargick and paralytick caſes, which in the human body ſometimes produces a *Gutta Serena.* This diſtemper of the Eyes is alſo cauſed by blows or wounds on the Head, and by ſeveral other accidents; but Horſes are ſeldom ſubject to it, and I have not ſeen above two or three Horſes blind with a *Gutta Serena*, unleſs where it may be complicated with a Cataract, and thoſe Horſes were of the draught kind, and probably their blindneſs was cauſed by hard ſtraining in their work, before they had arrived to ſufficient ſtrength for labour.

The ſigns.

The ſigns of a *Gutta Serena* in a Horſe, are theſe. He always appears when any one happens to handle him as if he was more than ordinarily ſhy about the Head, eſpecially to ſtrangers; for blind Horſes can diſtinguiſh ſtrangers from thoſe that look after them and feed them, by the voice and other tokens.

When he is brought out into the light, he often pricks up or moves his Ears, raiſes his Head high, as a Horſe when he looks upwards to the light, of which he may for a long time have ſome little glimmering. When he moves he alſo lifts up his Feet exceeding high, and ſets them down with fear, not ſeeing the ground nor any objects round him ; and if his Face is turned to a wall when the diſtemper is compleat, he will run againſt it, notwithſtanding no other defect can be ſeen in the Eyes, than that they are in a great meaſure immoveable, and keep one direction, otherwiſe they look clear and without blemiſh. Another thing to be obſerved in a *Gutta Serena* is, that it generally ſeizes both Eyes at once.

This ſort of blindneſs is in a great meaſure incurable, unleſs a Horſe be young, and when it is diſcovered in time ; for as no defect is to be ſeen in the Eyes, it may go on and not be found out till it is too late for any thing to be done. It may be ſometimes cured when it proceeds from the Staggers, as in the inſtances I have related, of a Troop-Horſe that continued three months after his cure of that diſtemper ſtone-blind, without any viſible defect of his Eyes, and afterwards came gradually to his ſight. But theſe inſtances are few, and ſeldom to be met with. And where a cure is attempted it muſt be performed chiefly with mercurial medicines, ſuch as Calomel, Cinabar of Antimony, native Cinabar, mild purges, at proper intervals, and rowels ; but bleeding is often hurtful, and ſhould be taken only in very ſmall quantities, except in plethorick conſtitutions, that abound very much with Blood; in ſuch a caſe bleeding freely may be of uſe, as it may leſſen the quantity of the Blood, in the ſmall Arteries, which by their continual plenitude and preſſure, may in time deſtroy the proper functions of thoſe Nerves that are diſtributed to the Eyes.

CHAP. IV.

Of Fevers.

Definition of a Fever, with the various Kinds of Fevers.

ALL Fevers conſiſt in a more than ordinary degree of motion in the Blood, attended with a preternatural heat, and in ſome with inflammation and burning. Some Fevers are more ſimple, and others more complicated. In ſome the Fever riſes and falls, being higher at one time than another; and ſome Fevers are periodical, and come only at a certain time, even to an hour or to a minute, once or oftner a day, once in two days, and ſometimes once in three days; and as ſoon as theſe periods are over, the Fever generally goes entirely off, till its uſual time of return, which by continuance, becomes habitual. All theſe periodical Fevers are called Intermittents; but theſe ſeldom happen to Horſes. And the other Fevers, whether they be more or leſs compounded, *viz.* whether they are ſimple, inflammatory, malignant, putrid, or peſtilential; whether they riſe higher or lower, or have any other variations; yet if the Fever does not totally go off, but remains in ſome degree, ſuch are uſually termed continued Fevers, as conſiſting only of one period. Almoſt all ſymptomatick Fevers, which ariſe from accidents of any kind, or from the diſeaſes of particular parts, generally conſtitute Fevers of the continued kind, and always remain in a higher or lower degree, until the cauſe by which they are produced is removed.

Of a Simple continued FEVER.

A ſimple Fever deſcribed.

A SIMPLE continued Fever, as has been obſerved, conſiſts in a more than ordinary rarefaction of the Blood, with an increaſe of its motion, and where there are few or no ſymptoms of any other diſeaſe, in which we ſuppoſe the Blood to be little, if at all vitiated, the principal Viſcera ſound, and no ways hurt or injured by any previous accident, or concomitant diſeaſe; and admits but of one ſingle period, having no intermiſſions, as ſome other kinds of Fevers, where the ſtate of the Blood is changed or altered.

Simple Fevers uſual in ſome hot ſeaſons.

This Fever ſeems to be very frequent in hotter climates, as appears from the writings of Signior *Ruini*, *Soleyſell*, and other foreign authors; and I have frequently met with it among our own Horſes, in the ſummer eſpecially, when the weather has been hot and ſultry, and the air much rarified. However, a ſimple Fever is ſeldom dangerous, but when ill-managed by the ignorant practitioners, who by improper applications often change ſimple Fevers into thoſe of the complicated kind.

The cauſe of theſe Fevers.

Simple Fevers may proceed from any cauſe that tends to rarefy a Horſe's Blood too much, as working or travelling in very hot weather; ſometimes from a diet too hot and rarifying, as too many oats, and perhaps ſome kinds of hay and graſs may have the ſame effect; it may alſo proceed from a particular temperament and diſpoſition of the air, which I imagine to be as frequently the caſe as any other; for I have known ſeveral Horſes in this Fever, at the ſame time, and in different places, where no other viſible cauſe could be aſſigned for it.

The ſigns and diagnoſticks.

The ſigns are ſome of them in common with moſt other Fevers, as reſtleſneſs, beating at the Flanks, the Eyes red and inflamed, the Tongue parched and dry, by an increaſed perſpiration. As in complicated Fevers Horſes often look dull, heavy, and liſtleſs; in this, a Horſe generally looks lively, moves his Ears backwards and forwards, and is very attentive to any noiſe, but loſes his appetite, and ſometimes ſo far that he eats nothing at all for a day or two, ranges from one end of his rack to the other, and nibbles at his hay, pulling it out without chewing it, as if he was curious and dainty; he generally ſmells at clean litter, and begins to eat ſtraw before he can reliſh his hay. As in other Fevers, where the Blood is vitiated, or where the principal Viſcera are affected, the Ears and Feet generally feel cold, or alternately cold and hot: in this the Ears and

Feet are commonly of an equal warmth with his other parts, which are generally hotter than ordinary, though not parched and dry, as in ſome inflammatory diſeaſes. He dungs pretty freely, but not much, and that is uſually hard and in ſmall balls, but ſeldom greaſy; he has ſometimes difficulty in ſtaling, and his urine high-coloured; he ſeems to thirſt, but drinks little at a time and often; which I take to be owing to the diſtention of his Lungs and Midriff, for that cauſes him to be ſhort-breathed, and hinders him from drawing down large draughts.

The Cure.

The firſt thing in order to a cure, is to bleed to the quantity of three pints or more, if the Horſe be naturally ſtrong and in good caſe. After bleeding give the following drench.

Take chamomile flowers; ſage and baum, of each half a handful; liquorice root cut into thin ſlices, half an ounce; ſal prunellæ, or nitre, two ounces. Infuſe in two quarts of boiling water in the manner of tea; when it is almoſt cold pour off the infuſion, and ſweeten with honey; but thoſe who will be at the expence may ſweeten this infuſion with four ounces of ſyrup of lemons, or ſqueeze a lemon into it, which will make it both cooling and grateful; three hornfuls may be given four times a day.

The manner of feeding in Fevers.

As all cooling applications are proper here, therefore his diet ſhould be ſcalded or moiſtened bran; his feeds ſhould be but ſmall, for when given in ſmall portions, it does not clog a Horſe, as when it is heaped on him in large quantities, for this always makes a Horſe take a diſlike to a moiſt diet, which is a great loſs, becauſe the bran keeps him open, and therefore half a quartern three or four times a day will be ſufficient, until he comes to a better appetite; and if he refuſes ſcalded bran, let him have raw bran ſprinkled with water. It is alſo neceſſary to pick out the fineſt and ſweeteſt hay, which ought to be put down into his rack by ſingle handfuls, and renewed pretty often, that being the likelieſt way to provoke a ſick Horſe to eat. This is ſufficiently known to every knowing ſtable-man, and I have only mentioned it, becauſe through negligence or lazineſs it is ſometimes but ill practiſed; and I have frequently obſerved in this Fever, that the firſt thing a Horſe craves to eat is hay, wherein he ought by all means to be indulged, for he will pick hay ſeveral days before he will touch any thing elſe. It is alſo a good way to feed a ſick Horſe now and then by the hand, for many familiar Horſes love to be fed that way, when they find it uneaſy for them to be continually reaching their Heads up to the rack; this method often entices them to eat as much as may be neceſſary for them, while the Fever is ſtrong upon them, for lowneſs contributes a great deal toward the removal of ſuch diſtempers as proceed from over rarefaction of the Blood; and it is obſervable in theſe caſes, that a Horſe ſeldom recovers, till he loſes his fleſh: his water needs not be much warmed, but it ſhould be given pretty often, and in ſmall quantities; for while the Blood-veſſels of the Lungs, Midriff, and other parts that ſerve to reſpiration, are full and diſtended by the over rarification of the Blood, as I have already taken notice, a Horſe in this condition is unable to glut down much at a time, for want of breath, which being obſerved by perſons ignorant of the true cauſes of this difficulty of ſwallowing, both when they drink, and when their drenches are given them, they are apt to imagine this ſymptom proceeds from a ſoreneſs of the Throat; and therefore they adminiſter ſuch things as they think proper to remove that ſymptom, and cover their Heads and Necks with woollen hoods, which is altogether unneceſſary, if not hurtful, there being nothing more wanting in the way of cloathing, than to cover the Horſe's Body from his Shoulders to his Hips, juſt to keep him moderately breathing, and to prevent his catching cold when doors and windows happen to be opened; ſo far indeed cloathing is neceſſary, but farther I think needleſs; too much heat and too great weight being improper in Horſe's Fevers, which ſeldom or never go off by critical ſweats, as thoſe of the human body, but by a ſtrong perſpiration; and indeed whenever a Horſe ſweats profuſely, without ſudorifick medicines in Fevers, or any other ſickneſs, it is uſually the effect of violent pain; and therefore in this Fever particularly, ſlender cloathing is certainly the beſt; and I am the more convinced of this, becauſe I have had

Uſeful Obſervations to prevent miſtakes.

many Horſes recover and do well in ſimple Fevers, that have never been cloathed at all, but ſtood altogether naked, and ſome of them in places that have not been very warm, but were ſuch as they had been accuſtomed to when well.

Having premiſed theſe things, I ſhall proceed to the other parts of the cure. If a Horſe in a day or two begins to eat ſcalded bran, and to pick a little hay, there will be no great need of any thing farther than good nurſing; but if he ſtill refuſes to feed, he ought by all means to loſe more Blood, and the ſame drinks ſhould be continued, which are both cooling and grateful to the Stomach, and two drams of ſaffron may be ty'd in a rag, and ſqueezed into the infuſion; it is much more ſafe and better than hotter cordials, and things of a ſpirituous or cloying nature, made with wine or ſtrong-beer, which ſome uſe upon all occaſions, or the drenches made with Venice treacle, Mithridate, and ſuch like things, which often prove hurtful, and ſometimes fatal, in ſuch caſes where bleeding and coolers are chiefly required.

The ſymptoms that require continuance of Medicines.

Obſerve his dung, and if that be knotty and dry, which frequently happens, by the increaſe of heat and perſpiration, in that caſe let the following emollient glyſter be given.

Take two handfuls of Marſh-Mallows, one handful of Chamomile flowers, ſweet Fennel-ſeeds an ounce; boil in three quarts of water, till one is conſumed; pour off the decoction, and add to it four ounces of common treacle, and a pint of lintſeed-oil.

This may be repeated till the Horſe's Body is open, and his dung of a looſe conſiſtence, which will greatly help him forwards in his recovery, and bring him to his Stomach, and do much better than purging glyſters, which in ſuch caſes often defeat the deſigns of nature, which requires nothing more than to keep the Body cool and open; and this end is better anſwered by theſe than purgatives. Therefore all the glyſters given to Horſes in continued ſimple Fevers, ſhould be of the emollient kind; and in places where chamomile-flowers and marſh-mallows cannot be procured in due time, a glyſter may be made with water-gruel and butter, or with fat broth, which will often anſwer the ſame end, without farther trouble. Theſe things will be of great uſe to cool and refreſh their Bodies, and to abate their Fevers, which generally continue but a ſhort time, when rightly managed, and go off gradually.

The ſigns of a perfect Recovery.

In a ſimple Fever, the Horſe generally begins to pick hay, the third or fourth day, with a ſeeming reliſh to food, though his Flanks will heave pretty much for a fortnight, and moſt of all towards the latter end of his ſickneſs, when the Fever has in a manner quite left him, in ſo much that I have known ſome perſons that could not be perſuaded but a Horſe has been worſe when all the danger was over, than when he was firſt took ill; but the true reaſon of this miſtake is, becauſe in all theſe kind of Fevers, a Horſe loſes his Fleſh very faſt, by an increaſed perſpiration, and the Lungs, Midriff, and Muſcles of the lower Belly, ſink in proportion to his other parts, which occaſions a quick reſpiration or breathing, that can only wear off as he gathers his fleſh and ſtrength; but then if we examine his caſe critically, at this time, we ſhall find all the ſymptoms of a perfect recovery. He will be all over cool, and in good temper, without any remains of preternatural heat. Tho' he labours much at his Flanks, it ſeems to be no great pain or uneaſineſs to him, for he eats with great eagerneſs, and makes no ſtops, as in the time of his Fever; ſo that he ſtands in no further need of medicines, but to walk him abroad every day in hand into the air, and in his ſtable to allow him plenty of clean litter, that he may lye down often to take his reſt, until he arrives to perfect health and ſtrength.

Inflammatory Fevers, how to be managed.

As to an inflammatory Fever, it is no other than an augmented degree, which may happen in Fevers of all kinds where there is a plethora or fulneſs of Blood; and whether that proceed from high-feeding, from the nature of the food, from the natural temperament and conſtitution of the Horſe, or from any other cauſe, is always dangerous to Horſes, and ought by all means to be ſpeedily removed by bleeding and other proper evacuations, with plenty of ſuch things as are proper to allay the intemperate heat and efferveſcence of the Blood, which ſymptom ought always to be regarded in this and all other Fevers, otherwiſe they will ſoon prove mortal. I have ſeen ſeveral Horſes opened that have died with their Blood exceſſively inflamed, and probably ſome of them for want of

The ill effects of inflammatory Fevers.

of proper and ſufficient means to recover them. Theſe had their Blood-veſſels ſo much crammed and full, that the Blood burſt out of the ſmaller veſſels, and run over their Carcaſſes in many places, while the collar-makers were fleaing off their hides. Their inſides were generally much inflamed, *viz.* the Lungs, Midriff, and Liver, with all the other Viſcera; and upon cutting open the larger Veſſels, the Blood guſhed out as from a fountain, filling all the cavity of the Body, which plainly ſhewed, that bleeding in ſufficient quantity was wanting; and likewiſe the plentiful uſe of diureticks, and things moderately cooling.

Of Complicated or Compound Fevers.

A compound Fever deſcribed.

A Compounded or complicated Fever, has beſides an augmented motion of the Blood, ſome evil qualities in the Blood and animal Juices, that gives riſe to the Fever, from whence they are denominated *malignant*, *putrid*, or *peſtilential*, according as the Blood happens to be more or leſs vitiated.

Malignant and putrid Fevers.

The malignant Fever ſeldom riſes to any remarkable degree of heat and burning, as other Fevers often do, neither does it come to any certain or diſtinct criſis; but as it creeps on gradually, ſo it wears off inſenſibly, nature ſtriving all the time, to get rid of her enemy in various ways, ſometimes by one ſecretion, and ſometimes by another, but not perfectly by any, which renders the cure both tedious and uncertain; and without great care and ſkill in the practitioner, theſe Fevers are apt to end in a Conſumption, and ſeldom or never come to diſtinct intermiſſions, as in the human body.

Practitioners apt to make miſtakes in treating theſe Fevers.

Theſe ſort of Fevers are not uncommon among Horſes, though few practitioners, for want of a competent knowledge in ſuch things, have been able to diſtinguiſh them from ſevere colds, or other diſeaſes that are attended with feveriſh ſymptoms.

The cauſes of malignant and putrid Fevers.

They take their riſe from ſeveral cauſes, ſometimes from unwholſome food, *viz.* eating too great quantities of rotten or coarſe hay, rank clover, muſty bran or oats, too many beans, muſty chaff, drinking unwholſome water; all which things weaken the Stomach and poiſon the Blood. Sometimes malignant Fevers proceed from want of exerciſe ſufficient to digeſt what a Horſe eats, and the more unwholeſome the food is, the more he ſuffers by lying ſtill, which firſt depraves the Blood, and at length contaminates the Glands, and renders them incapable of performing their proper functions; for in this Fever the glandular diſcharges are either too ſparing or too liberal, whereby a Horſe ſuffers extremely, though this irregularity in the ſecretions often proves the means to preſerve life, by affording a ſufcient truce for the proper means to be uſed for his recovery. Sometimes theſe Fevers proceed from haraſſing and working Horſes beyond their ſtrength, and by giving a ſhock to the conſtitution, cauſes an uncommon depreſſion of the Spirits, whereby all the natural functions are diſturbed, and put out of frame, and if a Horſe be old, he ſeldom gets over ſuch uſage.

The ſigns of a malignant Fever.

The ſigns are a ſlow Fever, with languiſhing and great depreſſions; ſometimes lower, ſometimes higher; ſometimes the Horſe is inwardly hot, and outwardly cold; at other times he is hot all over, but not to any extreme. His Eyes for the moſt part look moiſt and languid, and has a continual moiſture in his Mouth, which is the reaſon why he ſeldom cares to drink, and when he does, it is but little. He feeds but little, and yet is not apt to go totally off his Stomach, but leaves off as ſoon as he has eat a mouthful or two; and the continual moiſture of his Mouth cauſes him to move his Jaws in a feeble looſe manner, with an unpleaſant grating of his Teeth. He is commonly open in his Body, and his dung ſoft and moiſt, but ſeldom greaſy. His ſtaling is often irregular, ſometimes very little, and ſometimes he ſtales profuſely, ſeldom high-coloured, but rather pale, with little or no ſettlement.

The Prognoſticks.

If the Horſe has no great cold or inward ſoreneſs, he may with good management recover. If he be very old, and his Blood grown vapid and poor, it will be difficult to reſtore him again, ſo as to be of any great uſe, unleſs his conſtitution has been naturally ſtrong and vigorous. A Horſe that has met with any violent ſhock either in hard labour, or by any other accident, will be in danger of ſome inward abſceſs or impoſtumation. It is alſo a bad ſign when a Horſe's appetite declines, which in ſome goes off gradually, and grows leſs every day, till at laſt they forſake all manner of food. When the Fever does not diminiſh, or keep at a ſtay, but rather increaſes, the caſe is then always dangerous, and the Fever will require more than uſual ſkill to conquer it; but when the Fever ſenſibly abates, when his Mouth grows drier, and the grating of his Teeth ceaſes, when he mends gradually in his appetite, when he takes to lye, which at firſt he ſeldom does, ſometimes for a week, a fortnight, or longer; theſe are all promiſing ſigns; and when ſuch ſymptoms appear, nothing leſs than ſome prepoſterous ill management can prevent his recovery.

The Cure.

This Fever is little underſtood by moſt practitioners, aud at the ſame time ſo difficult, by reaſon of the various ſymptoms attending it, that I ſhall therefore be the more particular in the cure; and in order thereunto, it will be proper in the firſt place, to take away a moderate quantity of blood from the jugular or neck-vein; but this ſhould not exceed a quart or three pints, unleſs there be alſo a cold or inward ſoreneſs, or ſome inflammatory ſymptom, or a more than ordinary fulneſs of Blood, in which caſes a Horſe may loſe a larger quantity, and the bleeding may alſo be repeated, if it ſhould be found neceſſary. After bleeding, let the following infuſion be made.

Cautions in bleeding.

Take Rue, Pennyroyal, and Scordium, of each a large handful; Chamomile flowers, half a handful; Gallingals bruiſed in a mortar, half an ounce; the beſt Engliſh ſaffron, three drams. Iufuſe theſe in two quarts of boiling water in an earthen pan; cover the infuſion with a plate or trencher, and when it has ſtood to be cold, ſtrain it into another veſſel, or pour it gently off from the ingredients, which I think is rather the better way of the two for Horſes.

Let a pint of this infuſion be given twice a day, *viz.* in the morning faſting, and about two hours before feeding-time in the afternoon. It will both ſtrengthen the Stomach, and help to remove the diſorders of the Nerves, and by continuance wear out the Fever, if no uncommon accident or change happens, eſpecially if a Horſe be well ordered in his diet, and in other reſpects, as I have often found in many inſtances of Horſes that have been under my own care. But as Horſes in malignant Fevers ſeldom fall totally off their Stomachs in the beginning, as in moſt other Fevers, but uſually keep picking and eating hay all the time, at intervals, taking breath always between whiles, and then going to it again; ſo that few can be perſuaded of their danger, and therefore moſt people allow them oats or any thing elſe they can eat, which is altogether improper. And I have often obſerved in theſe caſes, when a Horſe is indulged with oats he cares for nothing elſe, and ſoon leaves off his hay, and after a little time loaths his oats alſo, and at laſt, forſakes all manner of food, and then his caſe indeed grows dangerous. Therefore this has been a ſufficient caution to me at all times, never to humour Horſes palates in Fevers, by allowing them oats or any thing elſe that may heat their bodies and give increaſe to their Fevers; but encourage

A proper regimen to be obſerved in the diet.

encourage them as much as poſſible in eating ſcalded bran, and if they refuſe to eat it ſcalded to allow them raw bran, ſprinkled with clean water, with the ſweeteſt and beſt flavoured hay that can be procured, and this ſhould be put into their racks only by ſmall handfuls at a time. But becauſe in malignant Fevers Horſes are apt to be depreſſed, ſometimes to ſuch a degree that they are ſcarce able to lift up their Heads to the rack; therefore they ſhould often be fed by the hand. And indeed, ſome familiar Horſes love to be ſo petted, and will by that means eat twice as much as they would do if they were left to themſelves. And I have always obſerved Horſes are never the worſe, but the better in Fevers, with any quantity of good hay they can eat, and generally with right care, the more they take to their hay, the more their appetite increaſes, and the better they reliſh their water.

Several neceſſary cautions.

Now as to their drink, it is always a good token, in ſuch caſes, when a Horſe drinks freely; for in this ſort of Fever they ſeldom drink what is ſufficient for them, till the Fever abates. But drinking is ſo abſolutely neceſſary to thin and dilute their Blood, and to promote their ſecretions, that whenever I perceive them backwards to drink water or gruel, or any thing elſe when it is warmed, I always allow them to drink it cold, even in winter, without any other warmth beſides the heat of the ſtable, that is, by keeping always a pailful of water in the ſtable, which takes off the chill, ſo as juſt to render it agreeable. This method often brings Horſes ſooner to their appetite, than by compelling them to drink their water of a nauſeous warmth, and I never knew any Horſe ſuffer by drinking cold water in Fevers; for when Horſes are hurt at any time with cold water, it is generally when they are heated with exerciſe, and chiefly thoſe that are corpulent and high-fed; for this chills and coagulates the Blood, and breaks its texture, whereas the cold water in Fevers diſſolves its grumous parts, and renders it more fluid, which greatly contributes to remove the diſtemper. Beſides, that cold water likewiſe cools and refreſhes their Bodies, abates their inward heat, and perhaps has ſomewhat of the ſame effect on them, that lemon-juice and acids have on the human body; and I have many times obſerved Horſes that have been much off their Stomachs in Fevers, and have obſtinately refuſed warm water, drink cold water heartily, and go immediately to the rack to eat hay, which has tended greatly to their recovery.

I have cured many ſlow malignant Fevers in Horſes ſucceſsfully, by this kind of management; but if the Fever ſhould ſtill continue, by reaſon of a more than ordinary ill diſpoſition in the Blood; if the Horſe feeds poorly, if he ſtales often, his urine thin and of a pale colour, and without any ſettlement; if his dung be ſometimes looſe, and ſometimes hard; if the redundant moiſture of his Mouth continues with redneſs and ſpungineſs about the roots of his Teeth; if his ſkin feels ſometimes dry, and his coat looks ſurfeited, at other times moiſt and damp; theſe are ſigns that the diſtemper ſtill remains in its force; and therefore the following things may be further adminiſtered.

Proper remedies in the increaſe of the diſtemper.

Take Diapente, two ounces; Myrrh and Virginia Snakeweed, in powder, of each half an ounce; Saffron, two drams; Liquorice powder, ſix drams; Mithridate, one ounce; make into four balls, with a ſufficient quantity of rectified Oil of Amber.

Let one of theſe be given every morning, and one every afternoon, about two hours before feeding-time, with three or four hornfuls of an infuſion, after each, made by adding to the infuſion above inſerted, half an ounce of Virginia Snakeweed, and two drams of Caſtor, cut into ſmall pieces, and mix with it a pint of white Liſbon or Mountain Wine. Let it be divided into four portions, for two days. After which the infuſion may be made freſh, with the balls, both which may be continued about a week, or till the Fever abates. Or the following may be adminiſtered, which perhaps will be no leſs efficacious.

A method of cure for Horſes of ſmall value.

Take Pennyroyal, Rue and Scordium, of each two handfuls; Chamomile Flowers, half a large handful; Gentian root cut ſmall, and Gallingals bruiſed in a mortar, of each half an ounce; Saffron, Salt of Wormwood and Liquorice, of each two drams; infuſe in two quarts of boiling water, adding to the infuſion, when poured off, four ounces of Spirits of Wine, wherein half an ounce of Camphor has been diſſolved.

This to be given as the preceding, *viz.* A pint every morning and afternoon, with a ball made of an ounce of diapente, a dram of Virginia ſnakeweed, and a dram of Ruſſia caſtor.

For a Horſe of ſmall value, give an ounce of diapente once a day, made into a ball, with mithridate and oil of amber, and make a ſtrong infuſion of rue and pennyroyal, whereof a quart, three pints, or even two quarts, may be given every day, at proper times, till the Fever abates, and may be continued afterwards during pleaſure, obſerving carefully all the above recited precautions concerning his feeding, but eſpecially that he has plenty of water; and as ſoon as the Horſe is fit to be walk'd abroad, it will be proper to lead him every day into the open air, for nothing will contribute more to recover him to his ſtrength and appetite.

New and dangerous ſymptoms to be regarded.

But if other ſymptoms ariſe, beſides what are common in this ſort of Fever, or if the common ſymptoms increaſe to any degree that may prove dangerous, theſe muſt be regarded. For inſtance, if the Horſe grows coſtive, and that continues ſo as to take him off his Stomach and increaſe his Fever, recourſe may then be had to glyſters, which ought to be of the emollient kind, and not violently purgative. Three or four ounces of cream of tartar, or the ſame quantity of lenitive electuary may alſo be mixed, and given in one of his drenches, once in two days, till he is ſufficiently open; this will be the likelieſt means to prevent inward inflammations, which in this languid ſtate of the Blood is ways dangerous. On the other hand, if the Horſe ſcours and purges, though this is often uſeful, and helps to abate the Fever, yet if it continue ſo as to render him weak and feeble, it will be proper to give it a check, which may be done only by ſubſtituting Diaſcordium in a few of his drinks, inſtead of the Mithridate above preſcrib'd; but if a perfect diarrhæa ſhould happen, then recourſe muſt be had to thoſe things proper in that diſtemper. See SCOURING and LOOSENESS.

The ſame rules ought alſo to be obſerved in caſe Horſes ſtale too much, which often happens, and cauſes a great depreſſion of the Spirits; the ſtaling ſhould be abated by proper reſtringents, or by making his drinks with lime-water, inſtead of ſpring or river-water, which generally ſucceeds in ſuch caſes; and if it happens otherwiſe, that a Horſe ſtales but little, and continues any time with this ſymptom upon him, ſo as to cauſe redundancy, with ſwelling of his Body and Legs, then recourſe muſt be had to diureticks, ſuch as the following.

> Take *Venice* Turpentine, half an ounce; Juniper Berries pounded, the ſame quantity; Sal Prunellæ or Nitre, an ounce; make it into a Ball with oil of Amber.

Let the Horſe have two or three of theſe balls given at proper intervals, with a pint of the following decoction after each, *viz.* Two large handfuls of the roots of marſh-mallows, wip'd and cut into thin ſlices, and then boiled in two quarts of river or any ſoft water to three pints, and ſweetened with half apound of honey. But theſe things need not be continued longer than while the ſymptoms remain, otherwiſe they may give riſe to contrary ſymptoms that may be hurtful.

What is proper to be done where the Fever is of a putrid kind.

If any other ſymptoms ariſe, ſuch as inward ſoreneſs, running at the Noſe and Eyes, with greater heavineſs and depreſſion than was before, the Fever may then be reckoned of the putrid kind, and ought to be treated as ſuch, for a putrid Fever ſeems to be no other than a degeneracy of a malignant, or any other Fever into a partial or univerſal rottenneſs, of which many inſtances are daily to be met with among Horſes, but are often the effect of ſome miſmanagement, whereby Fevers not dangerous in their nature and kind, often acquire ſuch complicatious as in the end render them deadly.

In a putrid Fever, the Blood ſtill becomes more ſlow and languid in its motion than is uſual in other Fevers, and is often attended with cold fits, and with trembling, the Juices of the Glands are more vitiated, and even grow corrupt. The lymph, which ſhould preſerve the Blood thin and fluid, coagulates, and alſo turns corrupt, and the inactivity of the Blood, and the want of due ſecretions in the Glands, cauſes a redundancy and ſtagnation in the ſmaller Veſſels, and this is followed with ruptures and extravaſations, all which produce putrefaction. If this happen only to the external parts, it uſually ends in ſome chronical diſeaſe, with ſcabs and eruptions on the ſkin, but when the putrefaction proceeds from lingering Fevers, it is then more univerſal, and ſeizes the Vitals and corrupts the Lungs, the Liver, Kidneys, or other principal Viſcera, and ſometimes the whole Maſs, ſo as to cauſe a moſt miſerable death.

Therefore, in all Fevers where there is any degree of malignity, the proper medicines ſhould be often repeated, to prevent putrefaction and rottenneſs; for if nature happens not to be very beneficent, the common method of adminiſtring two or three drenches will avail but little to prevent evils that attend theſe maladies; and if theſe medicines ſhould happen to be improper, the miſchief muſt ſtill be the greater. In ſuch caſes the practitioner's chief ſtudy ought to be, to order thoſe things in ſufficient plenty, that have a tendency to rarefy the Blood, and reſiſt putrefaction, ſuch eſpecially as have been already inſerted, with plenty of gruel and other diluters. But if there is actually the ſigns of putrefaction, the medicines ought to be joined with the warmeſt Cardiacks, Diaphoreticks, and Volatiles, ſuch as Sal Armoniac, Salt of Amber, and Salt of Hartſhorn; but becauſe of the high price theſe things would bear when given in ſufficient plenty to Horſes, I have often ſubſtituted Camphor and the oil of Amber, which contains a portion of the volatile ſalt in it, and which I have always found agreeable, in theſe and many other diſeaſes of Horſes. The latter has been already directed, in balls, a ſpoonful may be alſo added to every drink, and the Camphor may be likewiſe increaſed to two drams diſſolved in ſpirits, with plenty of diluters, even cold water, as much as he will drink, if he refuſes things that are warm; and by this method I have had many Horſes recover, notwithſtanding they have diſcovered the uſual ſigns of putrefaction. If the diſtemper be attended with inward ſoreneſs, it ſhould be treated with a mixture of pectorals, as in a pleuriſy or peripenumony, for rottenneſs and impoſtumations of the Lungs happen alſo from violent and inveterate Colds, where no malignant or other Fever has gone before. Of this the reader will be more fully informed, when I come to treat of the Diſeaſes of the Breaſt.

But in all putrid caſes to which Horſes are liable, whether they proceed originally from Fevers or from ſudden heats and colds, coagulating the Blood, or from any ſudden ſtop given to perſpiration, the following ſigns conſtantly attend, and are to be regarded, as they will enable the practitioner to judge what he is about. A Horſe in theſe caſes always runs at the Noſe, but not in a kindly white ſnot, as in the breaking of a cold, but of a reddiſh or greeniſh duſky colour, and of a conſiſtence like glue, and ſticks like turpentine to the Hair on the inſide of his Noſtrils. If this ſymptom abates and turns to a gleet of clear thin water; if the Horſe loſes his Fleſh, with his Hide open, and mends in his appetite; theſe are for the moſt part infallible ſigns of recovery, and nothing further will be neceſſary than to proceed in the uſe of the forementioned things, for a few days longer, and afterwards to walk the Horſe every day in the air. But if the matter continues paſted on the inſide of the Noſe; if he ſeems to have a conſtant ſtoppage there, from an obſtinate inflammation of the Glands, with a frequent ſneezing and conſtant ſnivelling; his caſe may then be looked upon as dangerous; and therefore no time muſt be loſt in plying him with proper medicines, and careful attendance: but if with theſe ſymptoms he loſes not his Fleſh, and yet becomes hide-bound; if he altogether forſakes his meat, grows more weak and feeble; if ſwellings ariſe about his Joints; if the kernels under his Jaws ſwell and feel looſe; if his Eyes looks fixed and dead; if his Tail is raiſed, and quavers; if his Breath ſmells ſtrong, and begins to purge and ſcour, and diſcharges a fœtid dark-coloured matter, his caſe may then be looked upon as deſperate; and it would not be worth while to be at any trouble or expence to ſave him.

The method to be uſed when a Horſe is upon the recovery.

But when a Horſe is recovering out of this diſtemper, he exhibits quite different ſigns; though he loſes his Fleſh, yet his Hide keeps open, and his Skin feels kindly; his Ears and Feet are of a moderate warmth; his Eyes, that before were dull and heavy, begin to look briſk and lively; his Noſe grows clean and dry; his appetite daily increaſes; he lyes down regularly, and reſts with great eaſe; ſtales and dungs regularly; and ſome break out with eruptions, in the decline of the diſtemper, which are of great ſervice: and where theſe ſymptoms appear, there will be no more need of medicines, but what further remains to be done, is only in the way of diet and exerciſe; which ought to be much regarded when Horſes are juſt come out of ſickneſs. In this reſpect moſt people uſually err; and are for feeding largely, to bring them ſoon into good order: and though ſome Horſes will indeed go thro' this kind of treatment without any hurt; yet when a Horſe, or any other creature, is much reduced and weakened with ſickneſs, the Stomach and Bowels are proportionably ſo too, which makes haſty feeding always hazardous, becauſe in this caſe the appetite often craves more than the Stomach can digeſt, and this may eaſily cauſe a return of the diſtemper, which I have ſometimes ſeen, and has always been dangerous; and if he eſcape a relapſe, it is great odds but he will be ſurfeited, which frequently happens; and the ſurfeits that come after Fevers, and other acute diſtempers, prove very obſtinate and hard to cure. And therefore the beſt way to avoid this, is to begin with a light diet, ſmall feeds, and increaſe by degrees, not according to a Horſe's appetite, which in ſome is exceeding voracious, but according as he gathers ſtrength, and is able to digeſt well what he eats. He ſhould alſo be taken out every day into the open air, in the manner that has been already mentioned, and be brought into his exerciſe and wind by degrees, and he will ſooner recover both his fleſh and ſtrength by this means, than by pampering and haſty feeding, or by any other method that can be deviſed, as I have often found from experience.

Of Epidemical FEVERS, and other Diſtempers of HORSES, ſaid to be catching and infectious.

THE writers in phyſick often diſtinguiſh between thoſe diſtempers that ſpread over many countries and nations at once, and thoſe that are limited and confined to particular provinces or places. The firſt they term Epidemical, the later Endemial; but that I may not puzzle my readers, I ſhall avoid as much as may be, the diſtinctions made by the learned, and treat thoſe diſtempers that come at ſome particular ſeaſons, whether they be more or leſs univerſal, or more or leſs infectious, under the general term Epidemical, that being an appellation moſt commonly in uſe among us, and the beſt underſtood.

Hiſtory affords us many diſmal relations of murrains and plagues among Horſes, and other brute creatures, in former ages, which were indeed ſo terrible, that they could be reckoned nothing leſs than heavy judgments from Heaven, being generally followed with famine and peſtilence among men, which ſwept off the greateſt part of the inhabitants, whenever theſe calamities come; but ſuch univerſal devaſtations have more rarely happened in latter times, and, by the goodneſs of Divine Providence, much leſs among us than in foreign nations.

It is, however, certain, that even in our times, Horſes as well as Men, are frequently ſubject to epidemical Fevers, and ſeveral infec-

Horſes ſometimes ſubject to Fevers of the peſtilential kind.

tious diſtempers, that may be reckoned of the peſtilential kind; and may be owing to ſome particular temperament of the air, or to ſome unknown cauſe, whereby many Horſes are ſeized, and in different places at once. Theſe prove more or leſs dangerous according as the previous ſtate of the Blood happens to be more or leſs depraved, or according as the preſent diſpoſition of the diſtemper happens to be more or leſs ſevere; for among us many of the complaints that come in this manner, prove but ſlight diſorders, and often go off without much help from medicine, only with a little care and management: others are more dangerous, and more remarkably infectious, and ſometimes prove ſuddenly fatal to many Horſes; but when ſuch maladies happen in our climate, they are uſually of ſhort continuance.

Peſtilential Fevers are thought only to differ in degree from thoſe of the malignant kind, which are common at ſome particular ſeaſons, and do not always prove deadly, though the cauſes from whence ſuch Fevers proceed may be very different, and are to us in a great meaſure unknown; but however that be, the deadly effects are much more ſudden than any other, and are ſuch, that they ſcarce allow time for the adminiſtration of medicines. The Fevers that reſemble theſe moſt in our climate, always begin with great ſtupidity, ſwellings of the Eyes and Eyelids, ſwellings of the parotid Glands and other kernels about the Throat, a profuſe running of duſky coloured matter from the Noſe, and a flux of the ſame kind of matter from the Mouth, and of a fœtid ill ſavour; ſudden large ſwellings of the Limbs, eſpecially about the Joints, which are often followed with Staggers of the apoplectick kind, having all the ſame ſymptoms that ariſe from poiſon, and are to be treated accordingly, with bleeding, glyſters, rowels, and other evacuations, with the moſt efficacious cephalicks and alexipharmicks, as Caſtor, Aſſa Fœtida, volatile ſalts of all kinds: balls or drinks made with Gentian, Zedoary, Gallangals, white Dittany, Biſtort, tormentil roots of contrayerva, and Virginia ſnakeweed, with Camphor, Mithridate or Venice-treacle, in the manner already laid down for the cure of malignant Fevers. But as theſe deadly diſtempers happen but rarely among us, ſo the ſickneſs here uſually rages but for a ſhort ſeaſon. I can remember this ſort of ſickneſs but once in my time, above thirty years ago, which almoſt ruined many farmers in ſeveral parts near *London*; it came in a very dry ſeaſon, and after about three months continuance, began to abate and grow leſs deadly, and ſoon after intirely ceaſed.

But the moſt common diſtempers of Horſes may be ſometimes counted epidemical; when they ſeize many Horſes at once, and become a general complaint in divers places, and are attended with ſome unuſual ſymptoms. Even colds are frequently ſo rife, eſpecially among young Horſes, that we can ſcarce go into a ſtable where the diſtemper has not ſpread itſelf with the appearance of ſome uncommon malignity; but theſe colds are often ſo far from pro-

Malignant Colds frequent and uſual.

proving deadly, that with proper care they tend greatly to the improvement of a Horſe's health and conſtitution, and render ſuch Horſes more hardy and durable afterwards, and recover many Horſes to perfect ſoundneſs, that before were full of complaints.

The ſigns of a malignant cold.

In epidemical colds, the glands about the Throat, and thoſe under the Ears, are more inflated than in common and accidental colds; and where a Horſe's conſtitution is good, and his Blood no ways vitiated before, may be cured as other colds, only that his Head and Neck ought to be more carefully covered and kept warm, to promote a conſtant breathing in thoſe parts.

An epidemicalcold in the year 1732 deſcribed.

About the end of the year 1732, there was a very remarkable diſtemper of this kind among the Horſes in *London*, and in ſeveral other parts of the kingdom. They were ſeized ſuddenly with a vehement, dry, ſounding Cough, which ſhook them ſo violently, that ſome of them were often ready to drop down with hard ſtraining and want of breath; their Throats were raw and ſore, many of them had their Kernels ſwelled, and painful to the touch. For the firſt two days moſt of them refuſed all manner of food, as well as water, and had ſo many other bad ſigns, that when this diſtemper firſt broke out, many were afraid of a mortality coming among them; and indeed the only good ſign they had was the vehemence of their cough, that both kept their blood in motion, and ſpeedily ſet them a running at the Noſe, which generally began the third day, and continued in ſo profuſe a manner for five or ſix days, that ſome of them in that time diſcharged as much as two or three pails would hold of purulent matter, which however was generally of a laudable colour and good conſiſtence. While the running at their Noſes continued, they could not feed much, tho' their appetites were craving, becauſe the matter mingled ſo much with their food, as to render it altogether diſagreeable; ſo that they loſt their fleſh exceedingly: but this loſs of their fleſh proved a benefit to them rather than a detriment; and as ſoon as the running abated, they eat voraciouſly, and ſoon recovered their fleſh. This diſtemper, though no ways mortal, yet was ſo very catching, that when any Horſe was ſeized with it, I obſerved thoſe that ſtood on each hand of him were generally infected as ſoon as he began to run at the Noſe, in the ſame manner as the ſmall pox communicate the infection when they are upon the turn.

While this ſickneſs laſted, above a hundred of the Troop-Horſes under my care were ſeized with it. I always cauſed the ſick Horſes to be removed from the ſound, as ſoon as they were taken ill, and put by themſelves, as in an hoſpital. And in one troop of the Horſe-Grenadiers we filled a ſtable of thirty-ſix ſtandings in three days, an infirmary of five ſtandings, and another of eighteen ſtandings, in three or four days more; nevertheleſs all of them recovered in a ſhort time. Alſo many gentlemens Horſes where I was concerned, did well, without any remaining taint from the diſtemper;

and it was obſervable, that ſome who had been ſubject to a dry cough before this ſickneſs, continued more free from it for ſome time afterwards, though I do not remember any of them were abſolutely cured of this defect, notwithſtanding their great purgation from the Noſe, which plainly ſheweh me the difficulty of removing an obſtinate dry cough, by the common and uſual means of promoting a diſcharge that way. The Horſes that chiefly eſcaped the diſtemper, were thoſe that had been kept in conſtant ſtrong exerciſe, or full-aged old Horſes, many of which were no ways infected, though very much expoſed to it.

The method obſerved in curing this malignant cold.

The method I followed in curing this malady was ſimple and eaſy; for having obſerved by their dung and manner of ſtaling, that neither the Stomach, Guts, or Kidneys, were in any degree injured, but only their Lungs and the Glands about their Throats very much ſtuffed; I ordered them, as ſoon as they were ſeized, to be bled plentifully, which gave them a ſenſible relief, for at firſt many of them were feveriſh and very ſhort-breathed; and by ſomewhat emptying their veſſels, helped the ſooner to bring on the running at their Noſes, which in a Horſe anſwers the ſame end as expectoration in a man. Afterwards I gave them ſoft balſamicks, mixed with deterſives, which are always neceſſary for Horſes, becauſe they require more pungent and ſtimulating medicines than men, their fibres being more ſtrong and rigid; and therefore the following drinks were generally adminiſtred with good ſucceſs, *viz.*

Coltsfoot, Hyſſop, and Chamomile Flowers, of each a handful; freſh Linſeed and Garlick, of each an ounce; Liquorice-root cut into thin ſlices the ſame quantity; of Saffron half an ounce infuſed in two quarts of boiling Water; one half for the morning, and the other for the afternoon.

With theſe were given balls made of the warm aromatick pectoral powders, mixed with Honey; Balſam of Sulphur and Oil of Aniſeed. And in caſes where the phlegm appeared to be more than ordinary tough and viſcid, a ſmall portion of about four ounces of Linſeed Oil was added to ſome of their drinks; and in ſome caſes it was neceſſary to give about half a pint of white Wine, with a few ounces of Oxymel of ſquills. I did not perceive any of them coſtive, or very hot and feveriſh, after they took to run at their Noſes, otherwiſe it would have been alſo neceſſary to have adminiſtered emollient glyſters. And therefore, as ſoon as they looked lively and eat up their allowance, which was chiefly ſcalded bran and hay, I left off the uſe of medicines, and allowed them plenty of water, which had a good effect in thinning and diluting their Blood, which was extremely ſizy; and the cure was perfected by air and moderate exerciſe.

This diſtemper of ſhort continuance.

The continuance of this diſtemper among our Horſes was but ſhort. It began in ſome places in the country, near *London*, about the middle of *September*; for I did not hear it was univerſal over the whole kingdom; and in *London*

London it began in *October*, the weather being unuſually foggy, but was quite over in about ſix weeks or two months, and made ſo ſwift a progreſs, that in the ſpace of one week, there was ſcarce a ſtable without the infection; ſome Horſes were perfectly recovered in a week or ten days, ſome in a fortnight, and few continued under it longer than three weeks, or a month, before they recovered their fleſh, and their uſual ſtrength and vigour, and I obſerved ſcarce any did amiſs, except ſuch as had been unſkilfully treated, by cleaning and ſyringing their Noſes with ſharp ſtimulating things, which by irritating thoſe parts too much, brought a continued running of purulent matter on ſome that could not be ſtopped, afterwards with ſwellings under their Jaws, which ended in a Waſte and Rottenneſs; whereas if they had been left more to nature, ſcarce any of them would have done amiſs: but I have known the ſame thing happen in a common Cold, and in the Strangles, eſpecially when they have met with the like treatment, as will be ſhewn more fully when I come to treat of thoſe diſtempers.

An epidemical Fever among Horſes in the year 1734.

About two years after this, *viz.* in 1734, another epidemical diſtemper happened in the ſpring, that proved more fatal than this, tho' by reaſon of its ſhort continuance, was much leſs taken notice of than the firſt; for many Horſes recovered ſo far as to be out of danger in two or three days. In the one the Horſes coughed ſo vehemently in the ſtreets, and many of the hackney-coach Horſes and cart

Horſes, that were obliged to work, had their Noſes in ſo naſty a condition, and ſo much expoſed to open view, that they could not avoid being ſeen by every body. But this other diſtemper was not ſo univerſally talked of, tho' vaſt numbers were ſeized with it, and ſome died ſuddenly of it. In one week I had near a hundred of the Guard and Grenadier Horſes, beſides many belonging to gentlemen, taken ſo bad, and with ſuch violent ſymptoms, that I was at firſt afraid of its proving very dangerous; but of the great numbers that were under my care, not one did amiſs.

This Fever deſcribed.

They were ſeized ſuddenly with a very hot burning Fever, and their fleſh apparently ſeemed ſo ſore and tender, that they could ſcarce bear to be touched; they were generally coſtive, ſtaled but little, and that with pain and ſtraining, and of a very high colour. They refuſed all manner of ſuſtenance, and were ſo extremely ſick, that they would not drink; neither did I perceive any of them offer to lie down till their diſtemper came to a criſis: upon treating them with cooling and opening medicines, and with plentiful bleeding, they generally recovered.

I was confirmed in this method by ſeveral ſymptoms that appeared upon the turn of the diſtemper, ſome of them having very hot and inflamed eruptions, which broke out in ſeveral parts with bliſters, reſembling the St. Anthony's Fire. Thoſe that came to maturity, appeared generally on the inſide of the Arm or Fore-Leg, near the Elbow or towards the Hock, and ſome of them had ſeveral large bags of water that gathered on the ſides of their Bellies, or towards their Flanks, near the inguinal Glands, which the Farriers called a watery farcy, but indeed, was the effect of a very hot inflamed Blood. Some had been coſtive before this diſtemper ſeized them, for their dung was extremely hard and black.

The Cure.

In this caſe ſoft and oily glyſters were made uſe of to relax their Bowels, and in ſome the bleeding was repeated; cooling infuſions, with ſall prunella, and cream of tartar, ſaffron, and ſuch like things were alſo given, to open them both by dung and urine, and by that means to abate the heat and effervescence of their Blood; which not only took off their Fevers, but cauſed the critical diſcharges from the boils, which at firſt had but a very indifferent aſpect, to digeſt into good matter, without leaving any taint behind them; ſo that none of the Horſes that were treated in this manner did amiſs, and where ſome died in the hands of unskilful perſons, it was generally owing to their giving them hot inflaming things, under the notion of cordials; and cloying them with ſugar ſops before their Fevers were abated, and their Stomachs in a condition to receive food. And indeed this is the true reaſon why ſo many Horſes miſcarry in Fevers, because moſt people are apt to force them to feed, by adminiſtring food with a horn, when it is altogether improper, neglecting to bleed ſufficiently in the beginning, giving hot medicines inwardly, with wines and other ſpirituous

Why ſo many Horſes miſcarry in ſuch diſtempers.

tuous liquors, which only add fewel to the fire; which things are always pernicious in inflammatory diſtempers, eſpecially to Horſes that are uſed to a ſimple diet.

This Diſtemper alſo of ſhort continuance.

This Diſtemper did not continue in its full force in *London*, above three weeks or a month; and thoſe that were ſeized about the latter part of that time had it more favourably, and required little more than bleeding. Thoſe that looked any ways ſurfeited were purged, and had antimonial powders given them, which generally perfected their cure; and ſome were ſent to the ſalt-marſhes, or other ſpring-graſs, the ſickneſs happening juſt before the graſs ſeaſon.

I have known ſingle Horſes ſeized with the ſame ſymptoms at other times, when the diſtemper was neither infectious nor epidemical; and theſe were always ſucceſsfully relieved with bleeding and other evacuations, eſpecially with diureticks and diluters, giving them plenty of water-gruel, or white water.

The Strangles is a diſtemper that almoſt all Horſes are ſubject to, at one time or another, eſpecially when they are young, but ſometimes it is very rife, and may be ranked among their epidemical diſeaſes; and then it ſeizes both young and old that have not had it before, and is ſomewhat infectious, tho' for the moſt part the Strangles are no ways catching. But in this caſe they are uſually attended with a Fever, loſs of appetite, and other ſymptoms of a malignant nature. But theſe things will be treated of more fully hereafter. See IVES and STRANGLES.

Spring-Colds.

In ſome ſeaſons the ſpring-colds among the young Horſes, are accompany'd with an epidemical Fever, eſpecially about the time of ſhedding their Teeth, and putting out of their Tuſhes; and without ſome care and diligence be uſed, theſe colds are apt to leave an ugly taint behind them, a continuance of the cough, or a relaxation of the Kernels under the Jaws, with a too great moiſture and ſnottineſs of the Noſe, which ſometimes turns to the Glanders.

The Glanders almoſt always infectious.

The Glanders is always reckoned an infectious diſtemper; but I have known this malady ſometimes more frequent than uſual, with the ſymptoms of very great malignity in the Blood. When this happens, it is more then ordinarily infectious, makes a ſudden progreſs, and ſoon ends in a Rot, and is extremely dangerous to all Horſes that come within the ſcent of their Breath, or into the ſtable where they ſtood, until it has been carefully cleaned and well-air'd.

The Farcy ſometimes catching and infectious.

The Farcy is ſeldom reckoned infectious, for it is often cur'd without removing the diſeaſed Horſe from the ſound Horſes that ſtand with him; the reaſon of which will be ſhewn, when I come to treat of that diſtemper. But the ſymptoms of the Farcy often appear in ſome kind of epidemical Fevers, when it is indeed infectious, and makes a quick progreſs on every Horſe that is ſeized with it, ſpreading univerſally over the whole Body, forming deep abſceſſes among the Interſtices of the larger Muſcles, diſcharging great quantities of corrupt fœtid matter, reſembling the grounds of beer. In the time of contagious Fevers, ſuch inſtances are ſometimes to be met with, where by reaſon of a more than ordinary malignity in the Blood, or ſome ill treatment, or ſome unfriendly diſpoſition of the air, all the common ſymptoms of a degenerate Farcy will ariſe; and this makes ſome afraid of every appearance of the Farcy, as being infectious; but in ſuch caſes it may be more properly termed an univerſal Rot than a Farcy, and for the moſt part proves deadly; and if any means are uſed, they ought to be ſuch as are proper in peſtilential diſtempers.

An epidemical Diſtemper that happened to ſome young Horſes.

About eight years ago, ſeveral young Horſes were ſuddenly ſeized with the Staggers, attended with ſuch uncommon ſymptoms, as put the ordinary practitioners quite to a ſtand. One thing was viſible to every body, that their Heads were greatly diſordered, by which moſt of them more or leſs loſt the uſe of their Limbs; ſome were only cramped and convulſed in a moderate degree, and were ſoon relieved by bleeding, and ſome few cephalick medicines, with rubbing and proper embrocations; in others this new diſtemper ſeemed to have a near affinity to a Hemiplegia, *viz.* that ſort of Palſy which in men takes away the uſe of one ſide, but not to ſuch a deadneſs as happens to the human body.

A very extraordinary caſe, which reſembled an *Hemiplegia* or dead Palſy.

I had one Horſe was ſo bad, that when he came to be moved, he was held up on the affected ſide by ſeveral men, who were forced to ſupport his whole weight. When he was let looſe in a riding-houſe, to ſee his motions, he turned round like a perſon in a Vertigo, and fell down ſuddenly; but this rotation or turning round, did not proceed altogether from the ..uſes which uſually produce the Vertigo in men, but from his wanting the uſe of his Limbs on the off-ſide, which made him turn round to his near-ſide, the Limbs of his near-ſide being no ways affected, but firm, which was the reaſon of his circular motion, for he could not get ſtreight forward for want of uſe in the other. Several Horſes were taken in the ſame manner, but in a lower degree, and ſome were convulſed, and had their Mouths ſomewhat pulled to one ſide, but were ſoon relieved; for thoſe that were only convulſed in this manner, retained ſomewhat of an appetite to feed, which greatly contributed to their cure. Another remarkable caſe happened at this time, of a Horſe that was ſo much convulſed, that whenever he offered to raiſe his Head in the leaſt degree, nothing could be ſeen of his Eyes but the whites, which made him look very ghaſtly; but as this Horſe had alſo a ſtrong Fever, and was affected on both ſides alike, ſo he never loſt the uſe of his Limbs, but only went ſtaggering, and with a catching, from the convulſive cramps. This Horſe recovered with bleeding and other plentiful evacuations, and the conſtant uſe of cephalicks, which were given him in great plenty, eſpecially the Caſtor, which had ſuch an effect upon him, that it kept him breathing above three weeks without intermiſſion, inſomuch that all his cloaths and the whole ſtable was perfumed by it; and if theſe things were but one day omitted, while

Another caſe of the ſame kind, but with different ſymptoms.

The method followed in curing theſe maladies.

the

the Convulſions laſted, the Horſe always fell back, and was the worſe for it; ſo that he muſt inevitably have died in the hands of any common practitioner, none of whom I ever knew treat convulſed Horſes after this manner.

As to the Horſes that were affected on one ſide only, their lameneſs was more apparent, ſo that I cauſed them to be put into cloſe ſtalls, and littered quite up to their Bellies; and alſo a good quantity of ſtraw to be piled up againſt the wall or partition next the lame ſide, that they might reſt upon it, and not be expoſed to fall down. One gentleman, who had a very fine Horſe ſeized with this diſtemper, ordered the whole ſide of the ſtall to be lined with a triple baſs matting, and his litter was ſpread all acroſs the ſtable, pretty deep, from the end of the ſtanding; which method was followed with moſt others that were under my care, and affected in the ſame manner, that they might not hurt themſelves in caſe they ſhould move backwards, and fall down, but lie eaſy till they were helped up, for ſcarce any of them were able to riſe of themſelves. But moſt of theſe Horſes leaned their lame ſides altogether againſt the ſtall, without moving their poſture, till they had pretty well recovered the uſe of their Limbs, which generally happened to ſome in about ten or twelve days; others that were leſs affected, recovered much ſooner, ſo as to be able to ſtand without leaning.

These had all of them Fevers when they were firſt ſeized, which is an uſual attendant on convulſive diſorders. But after bleeding and other evacuations their Fevers abated, and they began to feed on ſcalded bran, and pick a little hay by the hand, which was very helpful to them, and hept their Jaws ſtreight and pliable. They were bled plentifully, and had glyſters and lenitive purges, which to Horſes I always ſubſtitute inſtead of vomits, where the diſcharges of the firſt paſſage is required. They were at the ſame time plyed with cephalicks and proper embrocations outwardly, for which the reader may conſult Chap. I. & ſeq. where I have treated of all theſe diſtempers methodically, which derive their origins from the Head and Nerves.

The Staggers with the Yellows, ſometimes epidemical.

I ſhall conclude this ſubject of Epidemical Diſtempers, by taking notice, that the Yellows and Staggers are ſometimes epidemical, there being many young Horſes ſeized with this malady, more remarkably in ſome ſeaſons than others, and generally about the end of the ſpring, or the beginning of ſummer. This is no other than a bilious Fever, and ſeems to be the ſame mentioned by the Sieur *de Solleyſell*, Part II. Chap. XIII. under this title, viz. *Of the Diſeaſes of the Head, cauſed by cholerick Humors*, which brought a great mortality among the Horſes in ſome parts of France and Germany in the year 1660, and 1661, and afterwards in 1669 and 1670. This is ſeldom univerſal or of long continuance among us, but where it comes, proves fatal to abundance of Horſes, for want of knowing the true origin and ſource from whence all theſe various ſymptoms ariſe, whereby the Head and the whole Body is ſo much affected.

END of VOL. I.